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# Connecticit

ASSOCIATION MANUFACTURERS' CONNECTICUT, INC. VOL. 34 NO. 3 **MARCH, 1956** 

L. M. BINGHAM, Editor

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## 32 INCHES .... BUT A GOOD YARDSTICK

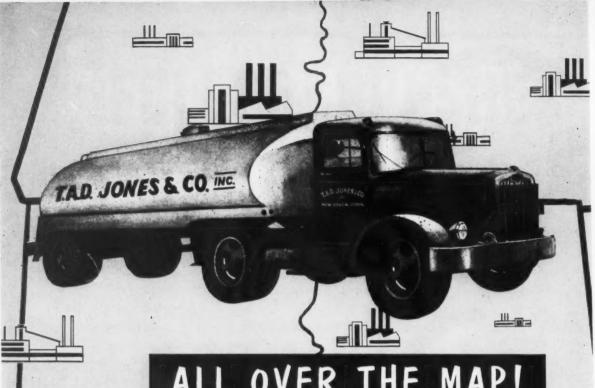
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For thirty years, T.A.D. Johns delivery-trucks have been rolling over the highways of unnecticut and Massanusetts, bringing a prompt and depend ble fuel-service to the tanks and bunkers of southern have England's inc stry. While not so conspicuously marked as to southern volume of our barge- and rail-a liverically important.

## Season Well With Salesmanship

By ALEXANDER H. d'ARCAMBAL, President

Pratt & Whitney Company, Incorporated

ACH week tons of newsprint, expert research and some mighty fine writing keep us constantly reminded that industry needs more and more trained engineers to engineer the gadgets that will require more and more salesmen to sell to an expanded buying public. The competent men and women in between the drafting board and the sales staff equally are in demand.

Every man-Jack of us finds difficulty in hiring the precise type of individual we want to fill a suddenly created need in our organizational chain from the birth of a product idea to the production line to the ultimate user.

By apprentice training we do our best to educate promising young men to fill the gaps that sooner or later we know will crop up in one phase of our business or another. More frequently than not we find that we have trained a man for someone else—and maybe he finds that he has trained one for us, too. We do our level best to maintain an atmosphere in our plants and our surroundings and our economic benefits that will make a productive employee like to work for us.

In every respect we recognize the fact that good citizenship on the part of a company does not occur accidentally. It grows out of a constant practice of golden rule tenets.

But here's a thought. In our never-ending search for good men, in our earnest endeavor to train the young in the ways of our business, do we put enough emphasis on a quality—a personal quality, if you must—that spells individual success and company success as well? That quality is good salesmanship.

There may be those who will thoroughly disagree with the philosophy that 'salesmanship' is that extra 'umph' that

makes an engineer a *good* engineer, that makes a plant guard, or a machine operator or an inspector or a salesman a *good* guard or operator or inspector or salesman.

Maybe some will think that I'm too much of a Pollyanna. Nevertheless, I'm convinced that our employees, irrespective of their individual responsibility, are our best salesmen. And I'm not singling out only those who negotiate our sales. If they aren't, then it's partly our fault. We have failed to give them that extra something that comes from the spirit . . . that quality called salesmanship.

Recently I read that today we need a million salesmen to move the products of our factories to the eager hands of the consumer. Statistically the production of this vast amount of consumer goods would require many times more production workers. And just a glance at the Sunday papers convinces any doubting Thomas that there are a hundred jobs open for any single available or interested engineer—jobs complete with rose garden and swimming pool.

Sure we need them—need them all. But the law of supply and demand is a reality that we must face. And there's very little unemployment. Let's make an earnest effort to instill that plus—that salesmanship—in the fine loyal folks we have. The reward will be very great.

The fact that I'm a chemist turned metallurgist turned salesman qualifies me to 'expert' nothing. But somewhere along the line from test tube to order pad my teachers taught me that salesmanship in every walk of life was not only a commendable trait for me but that it would pay off for my company as well. I've found the lesson to be so. Moreover, I have attempted to exert salesmanship in passing along to others whatever I have absorbed of chemistry or of metallurgy or of product selling.

A tourist once stopped in front of a little country store, dumbfounded at the sight of an enormous display of salt piled high all around the place. There were stacks of it and boxes and bags and barrels inside the store and out. "Boy, you must sell a lot of salt," he said to the storekeeper who slowly replied, "No, I don't sell much, but you shouldda seen the guy that came around last week. He could really sell salt."

Remember, not much happens until somebody sells something to somebody else—whither it be an idea or an overdose of salt or a cake of soap. So sprinkle each of your associates liberally with salesmanship and, with him, enjoy the benefits that will accrue to both of you.

Mr. d'Arcambal, the author of this months guest editorial, after graduation from the University of Michigan and seven years of service for several midwestern companies as a chemist and later as a metallurgist, joined Pratt & Whitney Company as chief metallurgist.

metallurgist.

He became sales manager in 1927; vice president in 1941; vice president, general sales manager and director in 1950; and president of Niles-Bement-Pond and general manager of its Pratt & Whitney Division, retaining those posts when the name was changed to Pratt & Whitney Inc. He is a director of Colt's, Hartford Home Savings & Loan Ass'n., first vice president Hartford County Manufacturers Ass'n. He is past president of the American Society of Metals and American Society of Tool Engineers. He also received an honorary degree of Metallurgical Engineer from the University of Michigan and at same time was made member of the honorary engineering society, Tau Beta Pi.

He also holds memberships in a number of clubs and is a Vestryman and Junior Warden of St. John's Episcopal Church, West Hartford.



MOLDS for these novelty plastic items were made by ABA Tool and Die Company, Inc. at its Manchester plant.

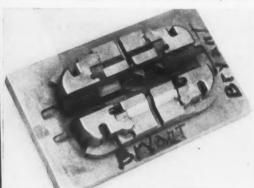
## Eleven Years of Growth at ABA Tool and Die Company

By LEONARD ZEIDENBERG

BACK in the war year of 1944, when defense plants were going at full tilt and industrial space was at a premium, two Manchester brothers and a Swiss colleague were working in the Howell Cheney Technical School in Manchester, man-

ufacturing a bricketting die for the Prophylactic Brush Co. of Florence, Mass.

The brothers were Clarence and Helmar Anderson. Their Swiss coworker was Edwin R. Bertsche. At various times in the past 25 years, one of the three had worked with one or both of the others in shops around Connecticut. Now they had just formed a company of their own —The ABA Tool & Engineering Co. —and the bricketting die was their first order.



A FOUR TO ONE MASTER which produces cores in the mold for an intricate electrical part.



A PRECISION transfer molded part from a mold made by ABA. Note the intricate insert work.



MOLDS for this dinnerware and brush handles were produced by ABA for the makers of these products.

Having formed a company, their's was a company without a home. They had bought a plant, on Grandview St. in Manchester, but it was occupied by a firm which had leased it from the previous owner, and the lease still had three months to run. At that critical juncture, the administration of the technical school came to the aid of the three partners, giving them permission to use the school's equipment. It was here that the partners turned out their first orders—the bricketting die, and an intricate airplane-fan mold.

In the 11 years since the organization of the company, now called the ABA Tool & Die Co. since it's incorporation in 1947, the business has grown and prospered. It now occupies 9600 square feet of floor space in handsome new quarters built five years ago on Tolland Turnpike, a few minutes' drive from the Wilbur

Cross Highway.

It employs 70 workers and provides life insurance, hospitalization and pension benefits fully paid by the company. It produces as many as 50 molds a year on a custom basis for customers all over the country, as well as precision parts for the aircraft in-

dustry.

Of the company's floor space, 7200 square feet is used for manufacturing. The tool-making machinery covering the floor and the men working at benches along window-lined walls, make the nights spent using Cheney Tech equipment seem a long time ago. Because of the nature of their work, it was necessary to install a heat-treating room where six furnaces are kept busy heat treating the products of other firms as well as ABA's.

One of the original partners, Edwin Bertsche, died last summer. Until his death, he had been Vice-President. The Anderson brothers still head the firm, Helmar as President and Clarence as Secretary-Treasurer. Although the firm has grown to the point where it employs two shop foremen, a general superintendent and a general manager, the brothers still assume some of the burden of solving the complex problems involved in designing and producing intricate molds.

The partners entered the mold-making business in the first place because they saw that the plastics industry was booming and realized that this boom was bound to create an increasing demand for ever more complex molds. Time has proved their forecast correct.

Plastics first came into popular use



MOLDS, DIES and other tools are born on the drafting board. ABA engineers are trained to think in terms of what can be done on their wide diversity of modern machine tools. Their services are available to ABA customers.

around the turn of the century. Their popularity grew in the twenties, as their lower cost, color appeal and versatility gained them favor. Today plastics go into the manufacture of countless items. Nevertheless, Helmar Anderson maintains plastics "are still in their infancy".

Plastics have long since replaced wood in the manufacture of many products and, as developments continue to increase their durability, they are beginning to outstrip steel in many others. In a display case in the foyer of the ABA plant are samples of the plastic products produced from the company's molds. Among these samples are toys, camera cases, radio cabinets, an intricate placque for the Longine Wittnauer Watch Company, a Corpus Christie, dinnerware, and caps and cups for thermos bottles. On display are all sorts of electrical equipment, for which plastic is especially suited because of its non-conductivity.

The increasingly intricate designs required by the manufacturers of plastic items challenges the skill and creative ability of everyone in a mold-making shop, from the designers and management personnel on down to the man on the bench. Design and management have to figure out not only how a mold can be made, but how it can be made at a certain price—a consideration of importance in the highly competitive mold-making business.

The worker, even though he has a blueprint to work from, often is confronted with decisions that only he can make. As a result, ABA like other mold-making shops, is a skilled-labor operation. Its employees, working from designs either drawn in the ABA plant or provided by a customer, turn metal blocks into molds that are used by other companies in the manufacture of plastic products or precision parts for the aircraft industry. It is no assembly-line operation. Few products are worked on by more than three men, and most of the employes can carry an operation through from steel block to precision-built tool or mold.

The Anderson brothers and Ed Bertsche had been preparing practically all their lives to run this type of operation. Helmar and Ed began their



THIS MACHINE, a Pratt & Whitney Jig Borer, as well as all others used by ABA, operates in an air conditioned room to maintain full precision.



A PARTIAL VIEW of the milling machine section of ABA, equipped with high precision machines.

careers over 35 years ago as apprentice tool makers, Helmar in Hartford and Ed in his native Switzerland. Clarence started out as a graduate of the drafting department of the State Trade School in Manchester. Helmar and Ed entered the plastic mold-making field in the middle twenties, but Clarence, whose employment record since his graduation from trade school had been largely with insurance companies, was a comparative latecomer. He started his career in plastic mold design in 1941, when he went to work for the Parker Stamp Company in Hartford.

It was here that all three future owners of ABA, whose employment paths had crossed once or twice in the preceding 20 years, first worked for the same company at the same time. It was here that they decided to go into business for themselves. They had by this time accumulated a considerable numbers of years' experience in mold-making, both on the bench and in design work, and they foresaw a tremendous future for plastics. Given those facts, they were not long in arriving at the conclusion that they would do better as their own bosses.

However, the problems involved in getting a tool-making business started in a war year proved to be great. There were government restrictions on the equipment they needed for their plant, and there was a manpower shortage. But with orders coming in, they managed to improvise. One of their most important purchases in those years was a second-hand hobbing press, a tool vital to their type of business since it is used to hob cavities for molds. To make up for the manpower shortage, the partners worked 12-hour days, and

when help was available for part-time work, the plant operated 16 hours, with the employees working a four-hour shift. ABA was in business a year before it started putting on full-time help.

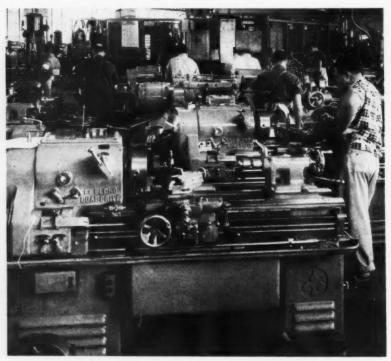
Then the pressure started to ease. Shortly before the end of 1944, government restrictions on equipment were lifted, and ABA was able to purchase what it needed. With the end of

the war, the lid came off entirely, and the company began to expand to meet the growing need for its products. By 1950, it was feeling cramped on Grandview Street and began searching for a larger plant. Unable to locate a suitable plant it was decided to build one on Tolland Turnpike.

When they bought their land (the plant is located on about four acres on the north side of the road and the company owns another 30 on the south side) the partners found they had purchased as well a piece of Manchester history. Along with the property, the company received two deeds which had been involved in an early transfer of a large section of land of which the ABA purchase was only a part.

One of the deeds dates back to 1796, the other to 1801. The earlier deed conveyed about 200 acres from one Timothy Anderson of East Hartford to Luther Gilman for one pound 10 shillings. The other conveyed another acre to Gilman, this parcel coming from an Isaac Maston of East Windsor, who was paid \$8.00. Over the years, the large Gilman tract was sold off in sections, with the last one going to ABA. The older deed is tattered now, but the

(Continued on page 39



HIGH PRECISION lathes of many famous makes are shown in this view of the company's lathe section.



EXTERIOR view of The Sibley Co., showing modern one-story building with unusually fine natural lighting afforded by ten foot casement windows around entire plant.

# The Sibley Company Story

ONNECTICUT industry, long known for its alertness to new ideas which contribute to our comfort, well being and security, can rightly be proud of its fast growing group of printed circuit manufacturers. Starting with costly and unreliable methods and materials, these circuit manufacturers, through research and development, are now furnishing production quantities of "pre-fabricated" electronic circuit assemblies to an increasing number of the country's manufacturers.

One of this group that has been instrumental in the development and promotion of printed circuits is The Sibley Co., located on Bridge St. in Haddam. Its offices, engineering, assembly and plating departments are located in a modern well-lighted onestory building, with a fabrication department located in a separate building in order that more effective control of dust and contamination may be achieved where critical processes are being conducted.

Originally established as manufacturers of builders' hardware and technical platers in Canada in 1912 by Mr. E. J. Sibley, the business was moved to Long Island in 1917. In 1945, Mr. J. R. Sibley, son of the founder, moved the business to Haddam. Because of an expanding market in the plating of precious metals, the hardware division was sold in 1953 which allowed fuller concentration on the newer problems of plating techniques.

Throughout the Korean War and more recent National Security Program, the Sibley Company's technical plating facilities of silver, nickel, copper, rhodium, gold, palladium, and alloys have served many of New England's manufacturers and labratories

who make up the "Arsenal of Democracy". Valuable processes have been developed by the company for alloy and thickness plating to meet special requirements of electrical conductivity of parts in critical assemblies, or for corrosion control of close fitting assemblies.

In the last few years the manufacture of electronic equipment with complex wiring systems has created a



PLATE CAMERA used in reduction process of commutator design to ensure accuracy in miniaturization of finished disc.



CIRCUIT panels are fabricated to customer requirements in this well-lighted working area of Sibley plant.

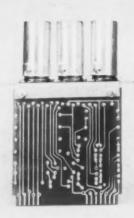
demand for some method of making reliable low cost circuits without the maze of wires and chance of malfunction through inept assembly. Coupled with this demand is the advent of transistors and midget batteries which have made bulky assemblies no longer necessary. At the beginning of World War II, the Armed Forces were quick to recognize the need and to pioneer the development of minituri-

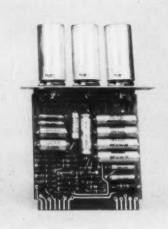


VACUUM FRAME is prepared for transfer of wiring design to photo-sensitive laminate under high intensity arc-light.



OPERATOR drills the center hole of commutator disc on sensitive drill press to ensure concentricity.





TYPICAL EXAMPLE of "pre-fabricated" wiring circuit, showing components neatly installed. Entire unit plugs into receptacle for easy field maintenance. The panel was designed and manufactured for Hamilton Standard Division, United Aircraft Corporation.

zation and reliability of electronic devices through "printed" circuitry. Essentially such circuitry is a condensing of size of electronic assemblies, a mechanization of electronic wiring, and a reduction of the wiring to two dimensions. The first practical production of printed circuits was in the dark days of World War II, with the appearance of the miniature radio proximity fuse for the trench mortar shell. Other applications soon followed in triggering mechanisms and communication equipment.

In 1947, under the sponsorship of the Aeronautical Board and technical direction of the National Bureau of Standards, a symposium on printed circuits was held to acquaint industry with developments in this field in the expectation that American industry could and would develop further one of the most fascinating new ideas of mass-production of electronic devices in many years. Techniques that the Military had developed during the war were declassified and made available to industry for the advancement of the electronic art. In anticipation of modern warfare, manpower and critical materials are two very essential ingredients. Whereas strategic materials can be stockpiled, man-power in terms of mass-production capabilities cannot be stockpiled. The fact that the production of printed circuits is a machine process is therefor of primary military importance and concern.

As a natural adjunct to its field of specialized plating, the Sibley Co. began, in 1951, experimental work to develop methods for combining metal plating conductivity with plastic laminates for the production of rotors, slip-rings, and commutator discs for use in radar and high-speed computer mechanisms and for automation programs in allied fields which required coded signals. Similarly, experimental work was conducted on tubular as well as panel circuiting.

Because of the severe limitations in potential capacity, the earlier methods of printing from plates or silk screens onto an insulating material using a conductive ink or paint to carry a weak current have been pretty well abandoned. Newer methods, as used by the Sibley Co., evolved through the production of resin and epoxy laminate sheets coated with a thin copper layer. One such method using these coated sheets produces the pattern through conventional lithography procedures; i.e. light-sensitizing and exposure to negatives. With the pattern thus created on the copper, it is plated for additional conductivity or wear resistance, and all copper out of pattern is etched off leaving the bare insulating laminate. Other methods used by the Sibley Co. for producing the diagram include silk screening and litho-press printing—the use of any method being determined by tolerances and production requirements. After the circuit has been etched, transistors, condensors, eyelets, or terminal lugs are soldered directly onto the circuit, and the complete assembly is ready for in-

(Continued on page 50)







AFTER PLATING commutator segments are flushed into insulating laminate under high temperature and pressure in this hydraulic press (left). In the center photo Philip Geffken, development engineer, is shown inspecting prototype wiring circuits for pattern accuracy and performance before release to production. At the right small radar parts are shown being racked for gold plating. The company was chosen to precision-plate many of the parts presently installed in our early warning radar network in Canada.



INDUSTRIAL TV receiver or monitor (right) using picture tube similar to those in standard TV receivers. Many applications can use commercial TV receivers. The industrial TV camera shown below is seven inches high and five and three-quarters inches wide by nine inches deep and weighs ten rounds.



# The Tail That Will One Day Wag the Dog

By QUENTIN Q. QUINN, Industrial Power Engineer
Western Division, Connecticut Light & Power Co., Waterbury

Editor's Note: The author of this article telling of the expanding uses of industrial TV is a member of Industrial Power Applications Committee and Executive Committee of the Connecticut Section of American Institute of Electrical Engineers and the Institute of Radio Engineers and the Illuminating Engineering Society. He is also Secretary-Treasurer of the Western New England Chapter, International Association of Electrical Inspectors and Vice-president of the Industrial Management Club of Waterbury.

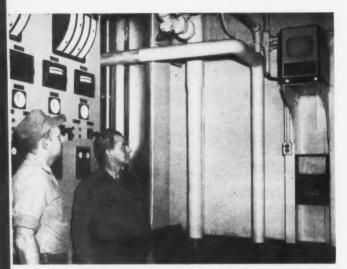
NDUSTRIAL television, a rapidly growing newcomer, has already started to keep check on remote boiler water gauges, view the interiors of furnaces in operation, watch smoke stacks, observe biller casting, check slab positioning, supervise productionline conveyors and act as guard over plant fence lines. Proposals for new uses appear every day. Connecticut manufacturers, quick to recognize a

new tool, have already begun to make installations and evaluate the possibilities that TV may have for future savings and increased production in their plants. A small appendage to a huge and expanding business, in-plant television, has its most imaginative sponsors not in the equipment suppliers, but in the engineering offices of industry.

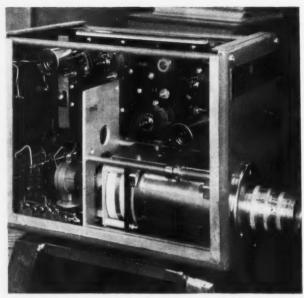
In the trend toward automation, the



Q. Q. QUINN



MEN IN CHARGE of boiler operation at the Connecticut Light & Power Co, watch the flame inside the furnace by means of a TV monitor which shows the picture transmitted by a camera near the top of the 147 foot high boiler.



INTERNAL view of industrial TV camera showing simple and compact design of the unit.

metalworking field seems to be a promising potential TV user. Seeing-at-a-distance, has advantage and importance in foundry and rolling mill operation, while the inspection of vital manufacturing steps from metal pouring to final product can save thousands of dollars a year.

#### Uses

The American Brass Company has considered its use to enable the operator to watch the distant end of a rolling mill from the control desk.

The Hawkridge Steel Co. of Waterbury has a plan to install a TV camera on the crane in it's new warehouse. The crane with its automatic stacker will be operated by remote control from a desk at one end of the plant, speeding up delivery of material and saving the time of the operator.

A unique proposal made by the supplier, Hatry of Waterbury, for this installation was the use of a standard TV antenna rotator to swing the camera in the arc necessary for pinpointing the observation.

From his desk the operator will send the crane to the proper aisle and bay which he will identify on his screen by number or letter. Sending the crane into the aisle, he will pick out the material required by shifting his camera to find it.

At the United States Rubber Company, Footwear Division in Naugatuck, engineers are evaluating TV use on the conveyor lines in their new

warehouse. Here several cameras may be used at strategic points to watch for material pile-up or deficiency. Stock movement would be facilitated and more efficient use of the conveyor system would be secured by improved supervision.

In the chemical field, observations hazardous or difficult for workers are readily made by TV. The engineers of the Synthetic Rubber Division of the United States Rubber Company in Naugatuck have laid out a proposed TV installation to watch the mixtures in their synthetic reactors. The appearance and motion of the process are much better indicators than the usual measurements by instruments.

Readings transmitted directly to recording or control points eliminating intermediate messengers or observers save time and money. The New Haven Railroad has a TV installation to transmit the numbers of railroad cars directly to their office.

Observations of the inside of a furnace while in operation result in more efficient fuel burning. The Connecticut Light & Power Company has a TV camera mounted on top of a 147' high boiler at the Montville steam plant watching conditions in the combustion chamber through a 3" diameter window. The monitor or receiver is located near the boiler control panel where all the other heat regulating equipment is mounted. This allows the CL&P operator in charge of the boiler to have a clear continuous view of the

manner in which the fuel is burning, and is particularly valuable during the start-up period.

Some power plant operators provide a camera for viewing the water level gauge high up near the roof of the power plant.

For efficient operation and smoke reduction, the Commonwealth Edison Company uses a TV installation to allow the boiler operators inside the plant to see the tops of the smokestacks outside. While improving public relations with the community, this installation also provides quick correction of improper operating conditions and a dramatic means for training operators.

The advantages of TV for dangerous tests are obvious and proposed uses for hazardous checking of munitions and aircraft are numerous. Operation of equipment for handling radioactive materials will require TV cameras for safety and convenience as is now done at Argonne Laboratories.

For testing and quality control, the receiver tube can be supplied with a signal to produce on the receiver screen a certain pattern instead of a picture. The supervisor or plant operator then need only watch for the expected trace on the screen or a deviation from it to determine the need for any corrective action. Practically any quantity which can be converted into an electrical impulse can be viewed in this manner.

Împrovements in camera and picture tubes which have made possible, op-

eration without high light intensities are expected to result in an ever widening field of application. Some suppliers claim satisfactory results under levels of room lighting as low as 10-15 foot-candles.

### **Equipment Costs**

While estimates of cost as low as \$1,500 have been made for the simplest type of installation (one camera and one receiver), the usual quotation is around the \$2,000 to \$2,500 mark. Camera costs running from \$1,000 to \$2,300 usually include the necessary power supply and output equipment to operate one or more receivers.

Camera dimensions are not large though they vary with individual manufacturers. Dumont's "Tel-eye", for example, is 4½ inches wide by 14 inches long by 9¾ inches high, while Diamond Power Specialty Company's "Utilvue" camera measures 7¼ inches, by 10 inches by 21 inches, and the "Blonder-Tongue pickup", 8 inches by 4½ inches by 3 inches. The smaller units use an external control monitor included in the camera price which can be mounted as far as 500 feet from the camera, while the larger have the advantage of a complete device in one enclosure.

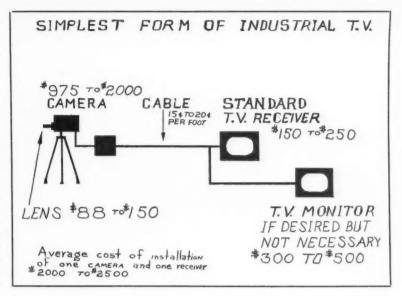
Most manufacturers furnish monitors for viewing but, in addition, design their equipment to provide a signal for any of the VHF bands. In Connecticut, channel #6 is usually selected. This arrangement makes possible the reception of camera signals on any standard TV receiver without any change in it.

Transmission from camera to receiver is by coaxial cable. No external radiation is used. This design eliminates troubles with outside interference disturbing the picture and requires no FCC licensing.

The distance from camera to receiver can be 4,000 feet to 5,000 feet, or more, before reamplification is required. Greater distances can be secured by the use of additional amplifying means.

While the most common industrial use is of the "closed-circuit" type with no external radiation, it is usually referred to as in-Plant TV to distinguish it from the so-called "hotel" type of closed-circuit TV, another fast growing industry, now used primarily for cross-country selling and demonstrating to select audiences such as manufacturers' dealers and representatives.

Industrial TV is not strictly limited to the closed-circuit type however. The



Hamilton Standard Propellor Co. has under test a proposed micro-wave TV link between their offices at Broad Brook and Bradley. It will be used to transmit to Bradley pictures of their micro-films stored at Broad Brook and to allow conferences between officials in both plants.

#### Accessories

While many potential uses for the installation using one camera and one receiver are apparent, individual problems often require more elaborate equipment. To fill these needs, suppliers are prepared to furnish such items as lenses, lens turrets, camera dollies, pan and tilt heads, weather enclosures and cooling apparatus as well as remote control and switching devices to accommodate more than one camera or more than one receiver. Sound can be added and even a color camera is on the market at around \$11,000.

Sometimes a single camera can be used with a lens turret and various types of lenses to secure the same results as several cameras with individual lenses. In like manner a pan and tilt device can be used to allow one camera to view a wide area.

Costs, of course, increase with the required complexity—a typical three-camera installation with monitor and spare "Vidicon" camera tube has been estimated at around \$8,000.

One manufacturer, Dage Television, has come out with a packaged unit for about \$3,550 which includes a multi-lens camera on a caster-tripod, with remote control for pan and tilt positions from a remote monitor-con-

sole. Such a combination would have sufficient versatility for varied testing and observational uses.

### Operation

Operation of the equipment requires no special skills. After preliminary adjustments are completed, most makers claim that no further changes need be made, cameras even automatically compensating for changes in light intensity.

#### **Cost of Operation**

Maintenance of the equipment consists mainly of cleaning the lense and camera tube surfaces and these requirements, of course, vary greatly depending on conditions under which the devices operate. Dust accumulation on the rest of the equipment, while it should be removed, can often be neglected with no serious results.

Usual recommendations say that the auxiliary tubes should be replaced every six months on a definite schedule. Cost of this replacement is usually under \$50. The monitor or receiver picture tube is expected to last about one-year and has a replacement cost of under \$35.

The most expensive replacement is the camera tube. One type, the Image Dissector, costs about \$1,200 and has a life expectancy of about six years, while the Vidicon costing about \$350 has a much shorter life. Cost of total tube replacement should be between \$250 and \$300 on a yearly basis, assuming almost continuous operation.

For a typical, one-camera, one-re-(Continued on page 54)



AN IDEA comes true as GE Wire and Cable Department Manager F. B. Ilsley, left, "Operation Survey" specialist Livingston Van De Water, center, and Philip Noel, who as a Wire and Cable die foreman held top honors in accepted-idea totals, go over rough of a cost-cutting new manufacturing procedure.

# "Operation Survey" Pays Off At General Electric

S THIS operation necessary? . . . Could it be combined with another? . . . Can equipment be redesigned to simplify things?

Getting the right answers to these questions from the people closest to the job—the foremen—is paying off in increased manufacturing performance, greater efficiency and reduced costs through "Operation Survey," a continuing program of idea solicitation from foremen at General Electric's Wire and Cable department in Bridgeport.

A regular feature at GE Bridgeport since late 1953, "Operation Survey" saved \$35,000 in materials handling alone in 1954 and over \$200,000 in all operations at GE Wire and Cable in 1955.

Here's how it works. A special ques-

tionnaire form was developed to get foremen to study their operations at periodic intervals. The sheets are numbered and sent to each foreman every two weeks.

It is part of the foreman's job to check each of the 24 questions on the "Operation Survey" sheet and to return it with his recommendations. And how he uses the form determines to a large extent his performance as a foreman.

Each foreman is credited in a running tally with actual dollars saved through his recommendations and is given a proportional award in points. And to those points are added more as reward for surveys involving intangible but vital savings like plant safety, and surplus equipment.

The incentive is provided by a report, issued every month showing each

foreman's standing in the idea pool and copies of the reports are sent to higher management responsible for recognition of outstanding performance, so that the ideas foremen submit earn a kind of interest for them.

Here's a case history of one of the earliest payoffs in GE's "Operation

Survey" program:
David B. Simmons, general foreman
of receiving and warehousing for Wire
and Cable, was making his rounds with

questionnaire in hand.

He noticed the familiar operation of sacks being loaded from pallets to trucks in a driveway, then hauled by fork truck to an inside elevator, lifted by attended elevator to the second floor. That way, each operation necessitated the elevator hauling two pallets and a fork truck each trip.

Thought Simmons, "There must be a

better way."

And there was. Why not an automatic elevator with a bigger load capacity plus a truck unloading dock near the elevator? So he worked out the idea with William J. Owens, manufacturing engineer and before long there was a scale model.

Next step for Simmons was to make a preliminary check of his idea with Livingston Van De Water, "Operation Survey," specialist. Following that, a meeting with the cost-reduction task force, which gave the green light for the project.

From then on, cost reduction task force followed up Simmons' "baby" to its realization. Completed, the idea went to Department General Manager B. F. Ilsley for final approval.

"Operation Survey" specialist Van De Water has received numerous queries from firms from Connecticut to Canada since "Operation Survey" started in 1953.

And he's been faithfully answering all the letters and sending along a copy of the 24-question "Operation Survey" form. (See survey form page 76)

He points out that the form used at GE Bridgeport is geared for wire and cable manufacture but that the form is basic and that questions can be adapted to fit conditions in other lines.

As Van De Water puts it, "It's a wonderful way to make idea men out of foremen, for everyone's benefit."

Agrees Wire and Cable General Manager Ilsley, "the savings record and dividends in ideas have certainly proved Operation Survey's worth."

(Continued on page 76)

## My Impressions of The White House Conference on Education

By ROLAND M. BIXLER, President J-B-T Instruments, Inc., New Haven

s one of the 19 delegates from Connecticut to the White House Conference on Education, I brought home (1) a sense of real participation, (2) wider horizons, (3) considerable new information, (4) the feeling that every line of the final report packs more meaning than is seen at first glance, (5) the impression that Connecticut is doing relatively well for its public elementary and secondary schools, and (6) the firm belief that the major needs which are ahead in education will have to be met head-on by the locality and the state, regardless of whether or not there is Federal financial aid.

Never before have I participated in a national gathering of 1600 delegates plus hundreds of observers where I felt that my ideas and questions were heard, examined, and recorded on every major item of the agenda. The group dynamics technique of the Conference doubtless is familiar to all educators, but to show how it worked in Washington let's look at the makeup of Table 9, to which I was assigned. Before coming, each delegate filed information about himself. An IBM device arranged us into 165 table groupings of 10 or 11 people, based on sex, geography, occupation, previous conference experience, and professional or lay interest in education.

Table 9 was graced by three women, a rural newspaper editor from New Jersey, an active PTA official from Alabama, and a school department head from Puerto Rico. The eight men were an Illinois attorney; the liberal arts dean of a university in the District of Columbia; the superintendent of schools in Duluth, Minn., a former teacher now in charge of the Maine Education Association; the secretary of the New York State CIO; a recent college graduate representing an association to encourage student government; a county superintendent of



ROLAND M. BIXLER

schools of South Carolina; and myself as a manufacturer of instruments and electronic components (also Chairman of the Board at New Haven College).

Our table was not a perfect crosssection of the conference, for we had no Negro, and we somewhat exceeded the general ratio of 1/3 professional educators to 2/3 lay persons. But we were indeed typical as to (1) diversity of viewpoint, (2) previous knowledge of educational conferences at home, and (3) prior study of stacks of homework both from the conference office and many specialized groups interested in such subjects as gifted children, retarded children, physical education, civil defense shelters in new schools, discipline, taxes, and teacher training.

I marveled many times at how much Table 9 could agree on, how we could file minority opinions with mutual respect, and at how well the democratic process worked. Significantly, every other table I heard anyone discuss was claimed to be outstanding for its people of good will and its intelligent consideration. Had this been a resolu-

tion-passing, knock-'em-down, pressure-politics kind of conference, the results would have been far different.

To complete the description of the work at Table 9, we first met in the main meeting to hear a rather comprehensive report on each major subject from the chairman of its national subcommittee, which worked under the national chairman, Neil McElroy, President of Procter & Gamble, and the national vice-chairman, Connecticut's own Dr. Finis E. Engleman. Then each of the 165 tables met for several hours to discuss and record its conclusions on that subject. Every table selected one of its members as chairman, and another as secretary for that particular topic.

All agreements and requested minority opinions were read to the group before the chairman took them to Step B, where the 165 chairmen met at 16 tables of 10 each. There, he could report only what was recorded, but could and did help consolidate the findings with those of the other tables represented. Each table at this Step B then selected a chairman who went on to Step C, made up of two tables of 8. After several more hours, this resulted in Step D where two chairmen consolidated the reports and presented it to the entire conference the next day.

Copies of those 6 premliminary reports were available by the end of the conference and have been widely circulated. However, before Mr. McElroy's committee issues its final report to President Eisenhower, as the sponsor of the conference, the staff will have examined all 165 first-level reports on each of the six subjects dealing with the purposes of public education, school organization, buildings, teachers, finances, and public support of education. A number of good ideas which did not make the preliminary reports undoubtedly will be discovered.

Some wit said that this was the greatest convention of distillers on record. If so, a lot of the flavor came on through. For instance, on the subject of "What Should our Schools Accomplish?", the overall report set up as one of 14 goals "The fundamental skills of communication-reading, writing, spelling, as well as other elements of effective oral and written expression; the arithmetical and mathematical skills, including problem solving. While schools are doing the best job in their history in teaching these skills, continuous improvement is desirable and necessary." That is a distillation of what Table 9 said, a good deal of it in the same language, after going through 4 stages of consolidation. The last few words of the quotation mean to me, as one who believes the educators' tests showing that more students are doing the best ever on the three R's and on problem-solving, that those students still are not doing well enough for many of today's complex requirements. Ask almost any employer for verification. Time does not permit more examples, but this White House Report is full of meaning and deserves study for years to come.

The wider horizons referred to previously, of course vary with each participant. I was astonished to learn that there are 250,000 children in Puerto Rico who have neither school buildings nor teachers. The action of Wyoming, one of the less-wealthy states, in making a self-study of its educational needs and adopting a courageous new program by unanimous vote of the state legislature, was an eye opener. I am sure that many people understood the problems involved in desegregated schools in the South as they never have before. The possibilities of the Teachers Aid in the Bay City, Michigan, experiment, as a means of having the teachers spend more time in actual teaching, made quite an impression. The action of Los Angeles in giving up the Federal subsidy for hot lunch program because of too much red tape and regulation came as a surprise to many who feel that Federal aid can be granted without Federal regulation. One of the major purposes of the conference, which the press often ignored in trying to report Federal aid as the principal subject, was the exchange of information and viewpoints. The results on that objective alone would have justified the entire

The new information obtained by each participant of course depended

upon the point from which he started. I was surprised to learn that 12.5% of all school-age children are enrolled in non-public schools the country over, but in Connecticut this is 19.7%. Likewise, it was new information that 41% of public school revenues in the United States came from the states, while in Connecticut state aid accounted for 8% in 1929, and by 1953-54 was up to 27%, but is still well below the national average. Among the information which I was able to contribute was the experience of Business-Industry-Education Day when the teachers visit business and industry and the important converse, Education-Industry-Business Day, when people from the companies visit the schools and the faculty. Also, information about the Tilt-up construction of the new Amity Regional Junior-Senior High School in Woodbridge, which has many evidences of careful planning, and cost considerably less than other new high schools in the state, created considerable interest.

How does it appear that Connecticut is doing on public education? A great many statistics could be quoted, and there is no denying that our state has problems now and will have many more with the continuing wave of new population and the foreseeable shortage of adequate classrooms and qualified teachers. However, my impression is that the state as a whole has been recognizing the problems earlier than many other localities. For example, in 1955, out of 383,783 pupils enrolled in Connecticut, about 6% were in classes exceeding the normal capacity of the accessible publiclyowned school plant, but there are 1,236 new instruction rooms scheduled to be completed during the year 1955-56.

Although regional schools in this state are coming slowly, we are far ahead of 8 mid-western states, for example, which have 21,566 one-teacher schools and 5,856 districts with no schools. Comparisons are always relative, but as a parent I returned from Washington with the opinion that the educational opportunities for our children in Connecticut exceed, and if we maintain the momentum, will continue to exceed those in many other parts of the United States.

The thorny problems of the cost of education deserve an article by themselves. Currently the Federal government is paying about 3% of the cost through hot-lunch programs, land grants, Smith – Hughes vocational grants, and similar expenditures in-

cluding direct aid to Federally-impacted areas, but most of these are corollaries to other problems, such as disposal of farm surplus, rather than deliberate aid to education. For ten years, there have been various proposals before Congress to supply Federal aid either to all states or to those least able to pay the costs, especially of new construction. Several people have asked why the White House Conference favored some Federal aid where need can be demonstrated for construction of school buildings by a vote of about 2-1, since this was not a resolutionpassing conference. At Table 9, the majority, of which I was a part, voted 6-4 against Federal aid in further form. Other tables also recorded their minority and majority votes so that, unexpectedly, a rough total became possi-

The most appealing argument for increased Federal aid is that the Nation as a whole needs all its children given a minimum educational opportunity, and if this is not possible through local and state resources, the rest of the Nation should help. The principal arguments against more Federal aid are: (1) No state has fully demonstrated need. For example, South Carolina is 46th in rank as to state income, but is coming up rapidly, and the superintendent at our table said that their new state building program made it unnecessary for Federal assistance; (2) Every time Connecticut sends \$3.00 to Washington, there is a natural shrink of handling plus distribution elsewhere so that we get back about \$1.67, whereas we could be spending the entire \$3.00 to excellent advantage on education in Connecticut. (3) No one wants Federal control of education, but good government requires some accounting and some standards. These standards might become so rigid that we would lose the local initiative and control which has been so important in bringing American education to its present level; (4) Many states are trying to lure away tax-paying industries from other states by offering virtually no local property taxes at the new site. Is it proper that states losing this tax base should be expected to supply Federal money for the new localities which are not willing to tax themselves?

What, if any, Federal aid finally is voted depends upon many factors including desegregation and possible assistance for non-public school pupils,

(Continued on page 40)

## Pre-Determining The Market Acceptance of New Products

By A. D. CRONK, Promotion Manager The Patent Button Company, Waterbury

This is the second of a series of brief articles on marketing being contributed by members of the Connecticut Chapter American Marketing Association.

OU and your associates may have dozens of ideas for new products but they won't be worth anything until you screen them out and put the best of them on the market. When you are collecting ideas it is good to be uncritical and keep them flowing freely. When the screening or evaluating process starts however, you must be very hard-headed and logical. Very often an idea appears excellent on the surface and, if improperly evaluated, costs the company many thousands of dollars before the new product runs into the rough realities of production or distribution.

Some manufacturers, large or small, tend to put too much stress on production factors when evaluating ideas for new products, leaving the marketing or distribution factors more or less to chance. Others tend to overemphasize the sales factors—only to find that they have given their production people an impossible or unprofitable task. A good way to make sure that all factors are considered when you are evaluating new product ideas is to use a check list.

No one knows as much about your own manufacturing and sales problems as you do and you are the best person to make a practical check list for your particular situation. Such a list must view the proposed new product from many aspects such as engineering, manufacturing and sales. You will save time and avoid endless discussion of petty details if you hold to basic and general questions at first. If the idea passes most of these to your satisfaction, then you can proceed to the specific details which you consider important before you spend money for models and samples.

Here are some basic questions that we think should be asked when you are evaluating new product ideas. There



A. D. CRONK

are five questions in each group and the answer to at least three in each group should be "yes" if the new product is to have a reasonable chance of success.

From the engineering point of view:

- Can we describe the proposed product with reference to function, size, strength and appearance?
- 2. Do raw materials and finishes for such a product exist?
- Do we have, or know of, techniques for making such a product?
- 4. Are drawings, specifications and quality control data for products of this type available?
- 5. Can we tell approximately how long it will take to design a sample or working model of such a product?

From the manufacturing point of view:

- Would our geographic location make us competitive with regard to raw material and labor costs?
- 2. Have we had experience in all the basic operations involved in making such a product?
- 3. Do we have adequate equipment and plant space?
- 4. Can we tell what the inventory and service problems would be if we made such a product?
- 5. Can we tell how long it would take us to get into production?

From the sales point of view:

- Can we identify a definite market for such a product with respect to size, type and geographic location?
- 2. Does our location make us competitive with regard to distribution of such a product?
- Does the proposed product have unique features that potential customers would recognize readily?
- 4. Do we know or can we find out how much potential customers would pay for such a product and how many different styles and sizes they would expect us to provide?
- Are our salesmen or distributors familiar with the customers who might buy such a product?

From the financial and legal point of view:

- 1. Can we make reasonably accurate estimates of development and production costs?
  - 2. Are we financially able to develop and introduce the product?
  - 3. Could we make and sell the product at a profit?
  - 4. We can find out the long range prospect for the product?
  - 5. Can we find out if there are patent or similar restrictions on the production, sale or use of such a product?

(Continued on page 40)



VIEWING THE INTERESTING EXHIBITS at the conference are Elmer B. Foster, executive director, Connecticut River Watershed Council, Greenfield, Mass.; Sidney A. Edwards, managing director, Connecticut Development Commission, and C. W. Mayott, consultant, Hartford Electric Light Company.

## Sixth Annual Conservation Conference Features Causes, Effects and Remedies of Floods

ORE than 300 members and guests of the Natural Resources Council of Connecticut heard panelists discuss the causes and effects of floods and remedies to minimize them during the sixth annual Conservation Conference held at Hotel Bond on December 1.

Dr. Paul Sears, head of the Conservation Department, Yale University, keynote speaker at the morning session, stressed the need for community, regional and state planning to minimize future flood damage, recommended lowering the level of public and private reservoirs when heavy rainfall threatens to produce flood conditions and scored men who tried to make a "fast buck" through opening housing developments in filled-in swampland and other lowlands know to be inundated by every flood.

Governor Ribicoff, featured luncheon speaker, after lauding the courageous spirit of flood victims he had talked with throughout the state, joined with Dr. Sears in emphasizing the need for local, state and regional planning to avoid or minimize the effects of future floods. Admitting that rebuilding after the two recent floods would be high, he said he was "willing to take the political liability of looking the people in the eye and saying it should be done through taxes." Again sharing Dr. Sears' views he criticized builders for constructing homes in low-lying areas known to be subject to floods during periods of above normal rainfall. In closing, he urged those attending the conference to work for proper flood control measures if they would avoid a repitition of future major flood catastrophes.

The morning panel, moderated by Paul V. Hayden, vice president of the Connecticut Light and Power Co., discussed the "Causes of Floods." Members of the panel were: Larry R. Mahar, meteorologist at the U. S. Weather Bureau in Windsor Locks; B. L. Bigwood, district engineer at Hartford for the Surface Water Branch, U. S. Geological Survey, and Tate Dalrymple, chief of the technical standards section for the Surface Water Branch.

Joseph Gill, Commissioner of Agriculture, acted as chairman of the first panel at the afternoon session dealing with "The Effects of Floods," with C. L. Eyanson, president of the Naugatuck Valley Industrial Council and John Dempsey, mayor of Putnam and executive assistant to Governor Ribicoff and W. B. Young, dean of the College of Agriculture, University of Connecticut, as panelists.

Participants in the final panel of the conference, devoted to the solution or remedies for floods, included: Herman J. Kroppel, New England division, Army Corps of Engineers; Joseph A. Ward, Connecticut Department of Agriculture; Roland B. Greeley, Massachusetts Institute of Technology, and

(Continued on page 46)



SEATED AT THE SPEAKERS TABLE, left to right, Dr. Paul B. Sears, head of the Conservation Department, Yale University and Dr. James G. Horsfall, director of the Connecticut Agricultural Experiment Station at New Haven, and chairman, Natural Resources Council of Connecticut. Paul V. Hayden, vice president of the Connecticut Light and Power Company and chairman of the public relations committee of the Natural Resources Council, is speaking.

## **Creative Engineering**

By EDWARD DOMBROSKI, Assistant Product Engineer Underwood Corporation, Bridgeport

The "thinking-up" process suggested in this brief article is not only applicable in the designing of new products but also in the solution of other management problems. In fact the unrestricted free play of the imagination can help to bring better solutions to most any type of problem in the plant, at home or in the community.

PICK up almost any newspaper nowadays and flick through to the business pages and classified section. Chances are you'll come across a raft of headlines that read something like this:

"Creative Engineering Seminar Held By Local Firm"

"Creative Engineering Course Offered By School"

"Let Our Creative Engineering Laboratory Help You"

These, and a host of similar ads and stories, are showing up more frequently in the papers and magazines. With all this fanfare, you would expect to find our colleges and universities offering degrees in Creative Engineering. This will probably happen before too long and it is hoped that when such formal recognition is given it will not stifle the present unrestrained concept of exploratory Creative Engineering.

The classification itself may sound pretentious and stuffy to some of us. To others, it suggests the very basis of an exciting new field of study. The primary difference between Creative Engineering and its allied technical pursuits is that it advocates the full use of all the imaginative powers in approaching engineering design problems.

The struggle to find a new way to do something—or to do without something—requires a trained mind. Some of the "oldtimers" will scoff at this, rightfully claiming that Creative Engineers do not have a monoply on vision; that such ability is often the rule among persons with relatively little formal training. Their point is that anyone in the field can train himself to use his imagination more efficiently.



EDWARD DOMBROWSKI

If that's the case, why all the fuss? The increased attention being given to Creative Engineering probably resulted from the efforts of a certain professor who decided that the "cut and dried" approach generally favored by our educators was no longer sufficient to do an adequate job. He contended, among other things, that it was unfair to the employer, the employe and all others concerned to expect a newly graduated engineer to face challenging new situations practically without proper specialized training to do so.

Mindful of the unquestionable value of academic backgrounds, he nevertheless determined to overcome the staid academic approach with a flexible practical approach to the problem. His basic theme can be summed up in four

words: QUESTION — OBSERVE — ASSOCIATE — PREDICT.

A clear analysis of each problem must be made and the engineer depends increasingly on his imagination. As he diagnoses the situation, the Creative Engineer must begin searching for the solution.

#### Creative Engineer Unafraid of Apparent Absurdities

The customary way is to pick a stock answer for the problem and proceed to adopt it. The Creative Engineer, however, would vary this approach by opening his mind to all possible solutions regardless of their apparent absurdity. By listing these solutions first and leaving the analysis until later, the Creative Engineer freeshis mind to work on "hidden" thoughts or old bits of information which may be useless separately but may prove worthwhile when taken together.

When he has prepared his list, the Creative Engineer has set the stage for thorough analysis. Often what first seemed ridiculous paves the way for a new method of achieving something. As one of the ancient Greeks, Heraclitus, phrased it: "If you do not expect the unexpected, you will not find it."

Although this engineering tack lends itself ideally to the design of new products, there is little or no restriction in other areas. It can prove a most valuable tool in solving everday engineering puzzles. At first, the effort to think of various answers to engineering problems takes time. However, once the mind becomes accustomed to being set free, the process takes less time and the results are more concrete and productive.

It becomes evident, therefore, that the Creative Engineer is not confined to a particular field. Rather, he makes use of a particular method of thinking to aid him in the problem which he faces at the moment.

## Selling America Short

By GERALD BARRADAS

HOSE of us in our fifties remember when every intellectual field was open for discussion in the United States, when it was felt that any new idea for the betterment of business, of labor, of farming, of country was something to be welcomed, to be reasoned, to be challenged or to be supported. In this, as compared to other lands. Americans felt that they enjoyed something unique in civilized history. There were no taboo topics. Types of government, types of religion, types of economy, were all open subjects for comparison and for debate; and much self-satisfaction, good will and patriotism was sensed between Americans as these matters were discussed, because each American felt that there was opportunity in this country for individual and collective betterment by such dis-

For some years now, Americans have not enjoyed this feeling. It is recognized in religious, political and economic affairs that we have two wings of view, and that if we do not take our places in either one or the other of these wings, as we touch upon the overall topic of our private capitalism as related to the national government, that we must be either communistic, nazi-fascistic or "visionary". Since the difference between the two wings is but that of quantitative treatment for the same qualitative view of the whole subject we thus find ourselves limited to that one qualitative view.

In this single qualitative approach to which we seem to be limited as a matter of patrotism, we must want either more or less of the following same thing. Because private capitalism is more or less unjust (depending upon stage of the cycle), as it does not provide adequate opportunities for participation by society, government should impose more or less restriction on and/or take away from that capitalism more or less to help those "less fortunate than ourselves". What should be seen before it is too late by Americans is that this one simple qualitative view of capitalistic difficulty, and for method of treatment, is the same in principle as that which is seen by both socialism and communism; and that



**GERALD BARRADAS** 

these latter two are different from each other only in quantitative degree. These isms and apparently also our Rightism and Leftism feel quite simply that private capitalism is unjust at times and that we must take away from it quantatively some of its structural makeup. This is like the view that if a human body is sick, we should cut away from that body at any healthy (profitable) place, so long as the body continues to be sick. Structurally, private capitalism consists of principles of economic justice for free individuals and these principles function interdependently. This economic organism lives and grows as its constitution of justice, by individual reward for efficient and novel economic productions, is encouraged by government. The whole organism can be charitable voluntarily; and the experience we have had with it should indicate that because of its virility and efficiency, the private capitalism organism has been capable of being more charitable than any other type of economic col-

The organism of private capitalism can maintain itself as its makeup of justice is respected, and it can grow as requirements for new justice, because of development, are seen and applied. As long as it is felt that the view just stated is "visionary", "fantastic", "dangerous" or "rocking the boat", and that there can be no place

here for that kind of thought, we are selling America short.

The great difficulty today—affecting morality, affecting freedom, affecting democracy—is basically economic. Yet few among American authorities seem to give adequate recognition to this. It is true that our authorities-in government, in management, in labor, in farming-are hiring more and more economists (Fortune Magazine, December, 1955), but these trained men are being used: To forecast by projecting trends; to show when quantitative governmental correction is to the right or to the left of what should be optimum; to determine whether or not this or that type of competition is getting an "uneconomic" share of collectively produced wealth; to show how this lower or that higher amount of governmental charitable or restricted correction has made total national private business activity lesser or greater in some past time period.

Economists are not being consulted by American authority for theoretical explanations of overall capitalistic malbehavior and of suggested correction beyond the single view previously mentioned in this article. It should be conceivable that the United States has highly capable objective economists and that they are more versed in and have had more experience with the application of the theory of the private business system than the economists of any other country. It seems that the only reason why we do not trust our economic doctors with our problem is because we are afraid of what they may suggest. Yet, as before at such times in the progress of civilization, continuing maldevelopment makes it hard either way: Not to face the truth or to face the truth; not to strengthen our capitalism basically or to try to adjust it for the needs of is progress.

Besides the quantitative difference with single remedy by which economists are restricted, and by which they are made to appear as being subjective, there are the two fields (1) of national economics (cooperation), and (2) of business economics (competition). Economists know that these two fields cannot be opposed to each other

so as to further alone either democratic government or private capitalism. The welfare and security of each are interdependent with the other. Economic utility is a concept requiring constant determination in the field of cooperation. Also, economic utility is best derived as individuals are allowed ownership of their own creations; and such productions occur in the field of competition. It is economic for labor to be divided, for individual productions to be grouped, and for trade freely to be cleared through markets so as to distribute the utilities thus efficiently obtained. Individual competitive actions and collective cooperative groupings of such actions is as natural in the economic field for human progress, as actions for individual improvement combined with collective actions which follow the Golden Rule are natural in the overall civilization field.

It should be noted that we are prone today, depending upon how we earn our living, to take either Right or Left quantitative view, and to use emphasis of either national economics or business economics. As an example of this, this writer was called upon about six years ago by a national management association to participate with other local men in San Francisco in a discussion of the guaranteed annual wage. This writer was called upon first and he indicated opposition to the guaranteed annual wage by explanation of how every business for its own self-interest kept its payroll as straight-lined as it could so that as few people as possible were employed for periods shorter than a year, because the kind of work and the interest obtained paid off better by the longer term employee. Some twenty other men present followed, and all indicated how their particular companies recognized this, and that they held over types of their work, which could be held over, so that there would be labor needs for annual workers when their production demands were low. It should be noted in this example that this is the standard business economics approach for answering the question advanced. It should not be difficult to see why union groupings later took the affirmative position for the guaranteed annual wage because their view also emphasized business economics.

The right view would have correlated national economics with business economics on the guaranteed annual wage question, and it would have indicated that when the nation is not suf-

fering from lack of employment opportunity for its private capitalism, the annual wage guarantee is unimportant to the worker; but that when the nation is suffering from lack of employment opportunity, it is unjust and uneconomic for private management and for private labor groupings together to create new institutions which can still further restrict national employment opportunity for only those fortunate enough to fit in with yearly employment. Actually, no executive and no union leader wants to make conditions which monopolize production for particular people at times when there are inadequate national economic opportunities for production. However, this example is given to show that because of the possibility of being misunderstood, or because of the feeling that objective view may not be wanted, we have all found it necessary to be subjectively Left or subjectively Right and to emphasize either national economics or business eco-nomics so as to give "intellectual" support to our views.

Undoubtedly, this one qualitative view only with quantitative division has come about within the United States and within the Free World greatly because of Marx, Engel, Lenin, and others. The capitalistic-democratic world came to feel that any theoretical investigation of capitalism must be socialism or communism because the anti-capitalistic dogmas came in early and in foreign countries and fitted in with the oversimple revolution-byviolence attitudes. Socialism provided good stop-gap handling of depression, and it seemed a sensible way to appease the more extreme communism. However, it should be seen before it is too late that the guiding principle of both socialism and communism is to do just the opposite of what capitalism is constructed to do. Where capitalism aims to give to each individual in accordance with his production, socialism and communism take away from each individual in accordance with his production.

Socialism and communism are therefore capitalistic-democracy in retrogression. On this point, the writer is indebted to Mark M. Jones, Consulting Economist, Princeton, New Jersey, for his permission to use letter of November 12, 1955, which was received from him. The letter reads as follows:

"Your memorandum #12 of November 4, 1955, was very interesting.

"As I have observed the thinking and writing of recent years in this area, I have been impressed by a fallacy that seems common virtually to all of it. It is that Socialism, Communism, or any other shade of collectivism is or can be an alternative to Private Capitalism. There is no alternative to Private Capitalism if you posit a system of freedom.

"The economic side of this concept is that any form of collectivism is a lower order of economic pattern than Private Capitalism. The main difference is between a going concern and one in liquidation. Socialism and Communism in comparison with Private Capitalism simply represent different kinds of liquidation patterns and therefore are receiverships.

Thus it can be said that if you don't keep Private Capitalism financially successful, it will cease to be a going concern. If that occurs, it will go into liquidation and become a receivership known as Socialism or Communism.

"Although it cannot be estimated with exactitude, the observations made seem to warrant the belief that there is more than three times the potential well-being for a population as a whole in successful Private Capitalism than there may be in what usually ensues under Socialism or Communism at their best."

When American capitalism is improved basically, it will be, as before, by making it still more capitalism than it is; by making each individual still more pay his costs for acquiring utility, by seeing that each individual still more acquires ownership of that utility which he creates. Aside from administration of justice for business, government can help private capitalism only by giving it more opportunity to operate. Capitalism cannot get permanent basic help by government redistributing that which it has distributed. With the unscientific emphasis of either business or national economics, one over the other, and with the subjective Right or Left positions taken by authority, there are bound to be economic false gods to be worshipped on the road backwards from the great advancement capitalistic-democracy has accomplished for civilization. Among the false gods, the following as lone ideals should be recognized: "high production norms", "high national employment norms", "high wage rates",

(Continued on page 62)

## LIBERTY MUTUAL

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# Trouble at home means trouble at work

THE employee who is worried and emotionally upset about troubles at home is a candidate for an accident. Likewise, if he's unhappy about his job, he's apt to be an unsafe worker. Liberty Mutual believes that one of the functions of an *in-plant medical and health program* is to help emotionally upset employees. An important part of Liberty's new medical program is the assistance available to policyholders for establishing proper *in-plant medical and health* procedure. This begins with hiring and placement and extends throughout employment. Liberty's

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your in-plant medical program is set up by a staff of specialists from Liberty who can help you select, train and advise your medical personnel. Liberty's medical and health program pays off in lower costs for compensation insurance.



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## **NEWS FORUM**

This department includes a digest of news and comment about Connecticut Industry of interest to management and others desiring to follow industrial news and trends.

THE SECOND Connecticut Materials Handling Exposition featuring the Fork Truck Rodeo, will be held at the New Haven Arena on March 28-29. A statewide materials handling efficiency show, it will include demonstrations of the newest materials handling equipment, methods and techniques designed to reduce operating costs.

Admission is free and tickets may be obtained from exhibitors, or through the Chambers of Commerce throughout the state, and the Connecticut Valley Materials Handling Society.

Among the exhibitors are: C. É. Reutter Corp., Industrial Trucks, Inc., Leeds Conveyor Mfg. Co., Northeast Cleaning Materials Co., The Alfred B. King Co., H. G. Davis, Inc., A. D. Bowman, Inc., Fiberwood Containers, Inc., Ford Trucks, Inc., R. M. Pease Associates, Market Forge Company, Tesco Corp., Hyster Company, Pallet Sales Corp., Griesing Company, Sonotone Corp., Kughler Development

Corp., Brodie Industrial Trucks, Suburban Propane Gas Co., Detecto Scales and Industrial Scale and Equipment Co.

\* \* \*

ROBERT A. PRITZKER, president of the Colson Corporation, of Elyria, Ohio, has also been named president of the Connecticut Telephone and Electric Corporation, Meriden. Both firms are wholly owned subsidiaries of Great American Industries, Inc. Mr. Pritzker succeeds Robert T. Dunlap as president of the Meriden plant. Mr. Dunlap remains as president of Great American Industries, with headquarters

A native of Chicago, Mr. Pritzker was educated at California and Illinois Institutes of Technology and Graduate School of the University of Illinois.

\* \* \*

**ATTY. JOSEPH B. BURNS,** has been elected to the Board of Directors of the Fuller Brush Co., Hartford. Mr.

THE COVER



THIS MONTH'S cover photo shows the plant of the ABA Tool and Die Company, Manchester, and an array of some of the novelty plastic items manufactured from molds produced by ABA.

Burns, who is counsel for the company, and one-time Counsel of MAC, attended the University of Connecticut, Yale University, and the University of Colorado. He is on the faculty of the College of Law of the University of Connecticut, teaching labor and taxation law.

THE LEE COMPANY of Westbrook has announced the promotion of Arthur W. Torell, Jr., of Unionville, from the position of manufacturing supervisor to that of general manager of the company's Hartford division.

Mr. Torell has been associated with the Lee Company since 1949, directing the fabrication and assembly of precision machined components for aircraft and rocket accessories.

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for the past 25 years. He had operated his own machine shop during the past 22 years, and was previously employed at the Plastic Molding Corporation's plant in Sandy Hook. and a daughter.

He is survived by his wife, four sons,

REGINALD S. WATKINS, head of R. S. Watkins & Sons, Sandy Hook, died suddenly recently. Mr. Watkins

was born in Wiconisko, Pennsylvania,

and had been a resident of Sandy Hook

PONEMAH MILLS, of Taftville, is one of two of the nation's outstanding mills cooperating in the development of a new type of textile machinery known as "the unifil" designed by the Universal Winding Co. of Providence, Rhode Island.

The Taftville plant and Amerotron Corporation of Aberdeen, North Carolina, have agreed to put up over a half million dollars for 500 each of Universal Winding's new unifil loom

This Universal development is an entirely new concept of filling preparation. It brings the whole filling process into the weave shed and integrates it with the loom. The unifil was first introduced to the public at the American Textile Machinery exhibition in Atlantic City in 1950. Since that time extensive field tests have been conducted on a wide variety of spun yarns and fabrics to complete the full range evaluation.

THE POLY CHOKE CO., INC., has announced that it will leave Tariffville as soon as its new modern onestory building in East Hartford is constructed

The company's decision to change its location was made as a result of the damaged suffered during the August and October 1955 floods. Present plans are to start building this month. The management believes that all of its 39 employees will continue work at the new location.

REX M. BATHURST has been named plant manager of the new Altoona, Pennsylvania branch plant of Veeder-Root, Inc., manufacturers of counters and computing instruments, it has been announced by Harvey L. Spaunburg, president.

Mr. Bathurst has been a consulting engineer with Ford, Bacon & Davis, New York engineering firm.

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Engineering & Chemical Service

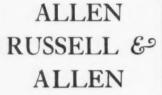
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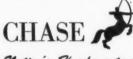


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**Promotions** 

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Pales and Merchandising Consultant

THE APPOINTMENT of Gordon Godfrey as general sales manager of the Ball & Socket Mfg. Co. of Cheshire has been announced by Charles J. Far-

ist, president.

Mr. Godfrey will direct the marketing activities of the 103 year-old manufacturer of Balso metal buttons which are distributed to toy, novelty, drug and hardware wholesalers, plus drug and retail chains. The company also contract-produces metal stampings and eyelet machine products.

Mr. Godfrey is a graduate of the Wharton School of Finance, University of Pennsylvania. He was sales manager of the H. C. Cook Co., Ansonia, and before that the C. S. Allen

Corp., Webster, Mass.



IT HAS BEEN ANNOUNCED by Carl E. VanWinckel, president of the Carwin Co., North Haven, that Donald A. Bender has been elected secretary of the company at a recent meeting of the board of directors.

Mr. Bender, who is also engineering manager of the company, is a graduate of Lehigh University and holds a master's degree in chemical engineering from Columbia University. He has been associated with the chemical concern since 1950, and was formerly with E. I. duPont deNemours and Co., and the Barrett Division of Allied Chemical and Dye Corp.



CLARK S. JUDD has recently resigned as a director of The American Brass Co., thus ending a business association that began more than 53 years

Beginning his career in July 1902 as a brass roller's helper at the old Coe Brass Mfg. Co. in Torrington, Mr. Judd rose through the ranks to climax a brilliant career when he was elected board chairman of The American Brass Co. in 1945. He retired from active service in December 1950, but has continued since that time as a consultant and member of the company's board of directors.



J. RAYMOND DELANEY has been appointed assistant to the works manager of the Bridgeport Rolling Mills Company, it has been announced by Robert L. Horton, executive vice president. Harold R. Woods is works manager of the company.

Mr. Delaney has been associated

with Bridgeport Rolling Mills for nine years as an industrial engineer and was head of the methods and standard department for the past four years.



A NEW FIRM began operations in Meriden recently for the assembling of precision metal and plastic components, employing only physically handicapped persons.

The firm, Arrowhead Associates, is a newly formed corporation and a subsidiary of the Mattatuck Manufacturing Company, of Waterbury, according to the announcement by Stuart E. Judd, president of the latter firm.

Ervin E. Schiesel has been named president of the new firm. He announced that an assembly operation will be conducted in the Meriden plant, with most of the parts coming from the parent company in Waterbury. The first product to be produced will be metal swivel glides for the furniture industry. Another product will be a complex high precision valve for the metal and glass container industry.

The production lines will be fully conveyorized, utilizing automatic assembly jigs and fixtures. All equipment handled by the physically handicapped will be hydraulically operated having built-in safety and quality control devices.

A SPECIAL SALES CAMPAIGN throughout all New England states has been recently inaugurated by the Bridgeport Rubber Company, division of H. O. Canfield Company, Bridgeport.



Designed to stimulate business in New England and to restore faith of business leaders in New England's old established manufacturing companies, the campaign will be directed by E. W. Howard, vice president in charge of sales.

A special team of salesmen will cover the six states on a good will mission for the Bridgeport company, manufacturers of high quality rubber products and components. On their tour

the salesmen will request responsible business leaders to transact business with New England companies wherever possible and call to their attention the fact that nearly two-thirds of rubber orders from New England manufacturers now go to the midwest.



PURCHASE of the Industrial Sound Control Corp., Rockville, by Koppers Co., Inc., of Pittsburgh, has been re-



THIS unusual environmental test chamber was designed and built by American Research Corp., Bristol, to overcome a problem of limited space. Their customer required that the altitude-temperature-humidity test chamber be installed in a location where there was insufficient room to swing a conventional door open. American Research engineers then developed this overhead type of door which would lift up clear of obstructions.

cently announced. The purchase was explained by Fred C. Foy, president of Koppers, as a part of the company's program of expansion and diversification in the metal products field.

Industrial Sound Control manufactures and sells acoustical equipment, particularly equipment used in the sound-proofing of aircraft engine testing facilities.



**ARTHUR R. GOW,** president of The Seamless Rubber Company, New Haven, has announced these changes in the Seamless organization.

J. Thomas Gibbons, vice president and general sales manager, has been named vice president and assistant to the president, and will continue as a member of the executive committee.

H. J. Barich becomes general sales manager and a member of the executive committee.

Mr. Gibbons joined the company in 1917. In 1928 he became a member of the sales department and two years later was appointed general sales manager. He became vice president and general manager in 1941, and since that time has been in charge of the sales policies for all divisions of the company.

Mr. Barich joined Seamless in 1954 as assistant sales manager. Prior to that he was affiliated with the Rexall Drug Company, where he was active in sales and merchandising for over eight years.



Records prove that we have the skill, the experience and the facilities to solve the most difficult dilemmas in weldment manufacture. Our talented team of engineers, designers, draftsmen enjoys working out specific weldment designs with a client . . . and our success in this field has earned us the phrase: "Talk to the men at A&S . . . they'll work it out." One look at our extensive, completely modern facilities and plant will underscore the reason why we are able to produce quality weldments of carbon and alloy steels, stainless steel, aluminum or copper.

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Entirely new in burning principle, construction and operation, this new industrial trash disposer combines the Hydroxolation principle of combustion and Triple Chamber construction recommended by combustion engineers as the only method to achieve safe, positive disposal without the nuisance of air pollution from smoke, fly ash or after smoldering.

## THE HYDROX-O-LATOR IS AN IMMEDIATE SOLUTION TO FOUR MAJOR REFUSE PROBLEMS IN INDUSTRIAL PLANTS.

#### UNSANITARY CONDITIONS

Immediate disposal of burnable trash reduces disease spreading potential of rat and fly infested refuse storage areas.

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Good neighborhood relations are protected when conditions caused by wind scattering trash are eliminated entirely.

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Fires resulting from unprotected accumulations of trash, rubbish and waste are a major hazard eliminated by immediate disposal.

#### HANDLING COSTS

The cost of re-handling and loading trash and refuse is tremendous. Hydrox-O-Lators conveniently located, eliminate the need for trucks and crews.

SPECIFICATIONS: Made of beavy gauge ARMCO aluminized steel and stainless steel. Industrial sizes from 5 to 30 bushel capacity.

## Confidential Paper DESTROYER

New, highly efficient, small destroyer reduces confidential papers, obsolete records and blue prints to white ash with noiseless, smokefree and odorless operation. Can be used indoors or out. Used by financial institutions, banks, engineering offices and laboratories. Light it . . . lock it . . . leave it! Dim.: 22" wide, 34" deep, 32" high.



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These increases are due to 4 reasons.

(1) Molykote resists pressures far beyond the yield point of any metal. Its lubricity improves with increasing pres-

(2) Molykote resists wear during extensive cycling.

(3) Molykote resists extreme temperature. It is thermally stable from -300°F to 750°F.

(4) When used dry Molykote does not collect abrasives.

Molykote contains highly purified molybdenum disulfide, a mineral with 40 lubricating layers in 1 millionth of an inch and a high tenacity for metal. There are 16 types in grease, powder, liquid and bonded coating forms. Write or call about your difficult "fringe area" lubricating problems. Ask for field reports for your industry.

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A REMINDER

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## HUMPHREY FABRICATING

Unionville, Connecticut

GEORGE GOEPFRICH has been appointed director of engineering and development at Skinner Chuck Company, New Britain. Formerly employed by Bendix Corporation, Mr. Goepfrich was chief engineer of the valve division of Skinner.

Robert B. Clay has been named to succeed Mr. Goepfrich as chief engineer of the valve division. He was formerly assistant chief engineer of that division.

### \* \* \*

THE APPOINTMENT of Lyman C. Thunfors as vice president and assistant plant manager of the Jenkins Valve Company, Bridgeport, has been announced by the company.

He was formerly president of the Rensselaer Valve Company, Inc., of Troy, N. Y. He resigned that position when the plant was sold to the Ludlow Valve Manufacturing Company of New York.

## \* \* \*

HAROLD F. KNEEN, president of the Safety Car Heating and Lighting Company, Hamden, has announced the following executive changes.

Robert B. Dodds, formerly vice president and manager of the entoleter division, has been appointed vice president and general manager of the electrical division. In this capacity he will have full responsibility for co-ordinating research and development, engineering, promotion of product lines, as well as the manufacturing operations at the Hamden plant.

Robert J. Hoskins, formerly assistant manager, was appointed manager of the entoleter division, replacing Mr. Dodds. Mr. Hoskins joined that division in July 1951 and prior to that was associated with General Mills and the Tennessee Eastman Company.

Mr. Dodds entered the employ of the company in 1935 as an engineer in the entoleter division. He was elected a vice president in September 1949.

## \* \* \*

THE KALART COMPANY, Plainville, has announced the availability of the new BC-400 flash unit, model 460, especially designed for the Polaroid Highlander Camera. The new model includes a special electric shoe-mount which attaches directly to the flash shoe on the Highlander Camera and requires no further wires or brackets.

It can also be used with almost any camera having built-in synchronization by inter-changing inexpensive brackets or connecting cords.

## "Completely Satisfactory" Says R. P. Alexander Co.



The old and the new were harmoniously combined by Barney's in furnishing the new building for the R. P. Alexander Co. Besides new steel desks and files, photo shows desks ordered 19 years ago. "They're a good as new," stated Mr. Alexander, who expressed warm appreciation for Barney's careful planning, attention to detail and completely satisfactory service.

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TWO COMPANIES in the Bridgeport area have been certified as excellently managed by the American Institute of Management. Those named are the Bridgeport Brass Company and American Chain and Cable Company, Inc. This places them among the 408 American and Canadian firms so cited by the institute for 1955.

The American Chain and Cable Company is receiving the award for the sixth consecutive year, Bridgeport

Brass for the fifth time.

OPERATIONS HAVE CEASED at the plant of the Round Chain division of Republic Steel Corporation, Bridgeport, it has been announced by H. C. Seifert, division manager. The Bridgeport operations will be consolidated with those of the firm's main plant in Cleveland.

The Cleveland firm had conducted operations in Bridgeport since January 1954 when it purchased the facility from the Bridgeport Round Chain Company. According to Mr. Seifert a shift in demand for some of the products manufactured here dictated the move.

NEW BRITAIN'S first permanent Development and Industrial Commission has been appointed by Mayor Edward B. Scott. It will concern itself with providing continuity of planning to retain present and attract new industries and business to the city and area. The commission replaces the Special Citizens Committee to Keep Industry in New Britain.

Appointed as members of the commission are Edgar G. Rhodes, president of the New Britain Gas Light Co., and designated by the Mayor to serve as chairman for five years; Bernard G. Kranowitz, executive vice president of the Chamber of Commerce, four years; Atty. Richard F. Berry, secretary of the American Hardware Corp., three years; Joseph A. Budnick, prominent in labor circles, two years, and Robert M. Richard, active in Junior Chamber of Commerce affairs, one vear.

TWO NEW HIGH SPEED rolling mills at its Torrington plant are helping American Brass Company to keep pace with the growing demand for fine quality strip aluminum and copperbase alloys. The rolling mills are 10-



Enthone of New Haven . . . besides being your prime local source for metal finishing chemicals... is internationally famous for the development of specialty products for metal finishing. Some of these are ENSTRIPS... Patented Products for Selective Dissolving of Metals.

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inch and 29-inch by 36-inch four-high reversing cold mills designed and built by the Lewis Machinery Division of Blaw-Knox Co., Pittsburgh.

Rolling strip at speeds ranging from 400 to 1,200 feet per minute, the mills can cold reduce aluminum alloys with a maximum starting thickness of 0.125-inch down to a final finished thickness of 0.010 inch, with intermediate anneals if necessary.

The strip metal produced on the mills goes to the "drawing trade" and to the "cut-up" trade for use in such products as fan blades, condenser cans for the electronics industry and for lamp stock.

WILLIAM R. TODD, SR., vice president and treasurer of B. F. Goodrich Sponge Products Division, Shelton, has recently relinquished the post

of treasurer of the company. He will be succeeded by Edmund L. Worfolk, who has been company controller since

1954.

Mr. Todd, one of the founders of the former Sponge Rubber Products Company, has served as company treasurer for 33 years. In his sole function as vice president, Mr. Todd will devote more of his time to manufacture.

THE APPOINTMENT of Robert W. Stock as head of the Lycoming News Bureau has been announced by Paul A. Deegan, director of public relations for the Lycoming Division of Avco Manufacturing Corporation, Bridgeport.

A member of the editorial staff of The Sunday Post, Bridgeport, for the past five years, Mr. Stock has attended Yale University, New York University and the University of Bridgeport.

E. C. BULLARD, president and general manager of The Bullard Company, Bridgeport, has announced that Roger M. Wakeman has been elected an assistant secretary and assistant treasurer of the company.

Mr. Wakeman, manager of the cost and payroll department since 1945, has been with the company since 1935. He is active in the National Association of Cost Accountants, and is past president of the Bridgeport chapter. He is also a member of the Bridgeport Tax Forum, the Tax Committee of the Manufacturers Association of Bridgeport, and currently is secretary of the local chapter, National Office Management Association.

WILLIAM K. HOOPER has been appointed manager of Republic Etched Products, Inc., Danbury, according to an announcement by John W. Douglas, president of the company.

Republic Etched Products, Inc., a subsidiary of Republic Foil and Metal Mills, Inc., Danbury, was incorporated last July for the purpose of manufacturing extra high purity etched aluminum foil for use in electrolytic types of capacitors required for critical applications demanding maximum dependability. The pilot plant is in operation in Danbury and commercial production is proceeding on a limited scale.

\* \* \*

**DEVELOPMENT** of a new series of chronometrically governed D.C. timing motors to provide the accuracy of an escapement clock and the power of an electric motor for military and civilian requirements has been announced by The A. W. Haydon Co., Waterbury.

These D.C. timing motors are said to keep rate independent of load, line and temperature variations. Power pulses at full line voltage are applied to a small motor at intervals controlled by a jewelled escapement, with the pulse duration determined by travel of the motor.

\* \* \*

THE MANUFACTURERS Association of Meriden and Wallingford recently elected as president Norman J. Stringer, head of the Meriden Foundry Company, and voted to alter its constitution so that its title will carry the names of the two towns from which it draws its principal membership.

Other officers elected were Burton G. Tremaine, Jr., vice president; Llewelyn A. Tobie, treasurer, George J. Sokel and William D. Benedict, auditors.

FOUR NEW PRODUCTS will be introduced by The Cushman Chuck Company, Hartford, at the ASTE Industrial Exposition to be held this month at International Amphitheatre, Chicago.

The new products, are the Cushman Accra-Set Chuck, which has been especially designed for minute accuracy which must be held to closer limits than possible with the standard scroll type chucks; a 3-Jaw, Scroll Operated Compensating Chuck, an addition to the company's manually operated chuck line; a new Air Operated Compensating Chuck which offers two distinct and important chucking ad-

vantages in one chuck body. This model is said to offer far greater compensating action than ever before possible, but also by "locking out" the compensating action and after being trued up on a spindle, the device can be used as an ordinary self-centering air operated chuck.



THE TREASURY DEPART-MENT, in a brief ceremony recently, cited The Anaconda Company and its employees as the first large industrial organization in 1956 to have achieved approximately 80% employee participation in the U. S. Payroll Savings Bond Plan.

The award was presented by W. Randolph Burgess, undersecretary of the Treasury, to Edward S. McGlone, executive vice president of Anaconda.



THE ADDITION of a complete line of Milford high speed steel hole saws has been announced by The Henry G. Thompson & Son Co., New Haven. Used in portable air and electric drills, drill presses, lathe tailstocks, etc., these hole saws are said to cut clean, round holes in virtually any machinable metal or other material.

Welded edge blade construction is used, and is claimed to provide unusually hard, sharp, fast-cutting, long wearing teeth combined with a tough,

resilient back.



HARVEY HUBBELL, INC., Bridgeport, has announced plans for an addition to its plant which will permit a 25 per cent expansion in business activity.

The firm has been located in Bridgeport since 1888 and specializes in the manufacture of electrical wiring devices and machine screws.



R. R. ZISETTE, a former vice president of SKF Industries, Inc., has been elected a director and vice president-general manager of Jessall Plastics, Inc., of Kensington, according to an announcement by C. F. Norberg, president of the Electric Storage Battery Company, owner of the Connecticut concern.

At the same time Mr. Norberg announced the election of R. S. Jesionowski as vice president and a director. Other new officers of the firm, which makes standard and custom plastic extrusions for chemical, aviation

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and other industries, are: E. J. Dwyer, secretary; E. W. Williams, treasurer and M. G. Smith, comptroller.



THE ACQUISITION of Cleveland Tapping Machine Co. of Canton, Ohio and the Cochrane Bly Co. of Orange by H. P. Townsend Mfg. Co., Hartford, has been announced.

These companies are engaged in the production of automatic machines and will be merged into the Townsend organization, according to Chester Bland, president.



WILLIAM S. SIMPSON, general manager of Raybestos Division, Raybestos-Manhattan, Inc., Bridgeport, was honored recently by the Political Relations Forum of the University of Bridgeport for his "Outstanding Community Contributions."

This is an annual award made by the Forum and cites Mr. Simpson because of his many affiliations with worthwhile community activities. Mr. Simpson is a Trustee of the University of Bridgeport, president of the Barnum Festival Society, president of the Community Chest and Council, member of the board of directors of Jr. Achievement, Bridgeport Boys Club, Bridgeport YMCA and vice president of the Bridgeport Manufacturers Association.



JOINING the list of newly designed standardized machine components of The Hartford Special Machinery Company is the Model 405 way type hydraulic feed unit, which was shown for the first time at the Machine Tool Show.

Designed to give "balanced thrust," the unit features thrust above the ways near the tool load. It provides positive control of rapid traverse, fine feed and depth. The flange is designed to simplify mounting and aligning of multiple spindle heads, and the 15" stroke assures ample tool change clearance.



A REVOLUTIONARY new series of electronically controlled post lanterns has been announced by Wasley Products, Incorporated, of Plainville.

The new Wasley "Electrona" series incorporates the famous "Light Watchman" electronic eye, an electronic control that automatically turns post lanterns on at dusk, off at dawn. The "Light Watchman" electronic eye was perfected by the Ripley Company, Inc., of Middletown.



THIS LAMP is one of the "Electrona" series now being merchandised through electrical wholesalers.

Each lamp in the Wasley "Electrona" series is a complete, self-contained unit which requires no special tools and is as easily installed as conventional post lanterns. The new group will consist of four authentic post lantern reproductions with a model to complement the decor of the average motel, commercial establishment or residence.



MORTON S. CRESSY has been named vice president in charge of sales of Emhart Manufacturing Company, a new position, in a move to expand the sales activities of all Emhart divisions. Three advancements in the Hartford-Empire division were announced at the same time.

Moving to the post of general sales manager at Hartford-Empire is Walter B. McKinney. Aaron K, Lyle will be

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You'll find us a handy source . . . and competitive, too-product quality and service dependability considered.

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The way to tap DSC's STRIPMANSHIP is to call your nearby DSC Customer Representative. You'll find him a hard steady worker on your team.

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"Boxed in Wood - Boxed for Good" 45 Bartholomew Ave., Hartford 6, Conn. technical manager of the division and Charles F. Claughsey has been named chief application engineer.

## \* \* \*

SIMEON W. SELLS, vice president for government relations, Pitney-Bowes, Inc., Stamford, and one of the country's leading authorities on the metered mail system of the U. S. Postal Service, has announced his retirement to take place July 1.

His duties have been assumed by Wilbur R. Greenwood, Jr., who has been appointed special assistant to the president. Mr. Greenwood, manager of special machine sales for the past seven years, will be succeeded in that post by Paul V. Roberts, branch manager at Harrisburg, Pa.



NEW LINES of sliding door hardware, to serve a strong national demand resulting from basic changes in the interior architecture of American homes, are now being produced and distributed by The Yale & Towne Manufacturing Company, Stamford.

All Yale sliding door sets consist of a track, hangers, floor guide and pulls. Overall simplicity of design permits quick, easy installation and eliminates expensive installation cost, according to the announcement.



WET CELL battery manufacturers are now successfully combining work on both metals and hard rubber in the finishing of cell covers which have phenolic bodies with lead terminal inserts. The machines being used are Bodine 42-30 dial type automatics equipped with 12-station dial feeds. Each of the Bodine units now in production, according to the manufacturer, requires but one attendant and combines operations which had previously required five separate machines and as many operators.

Production for a single machine is 1250 pieces per 50-minute hour. The machines are equipped with multiple tooling so that they can be used for various sized covers for both six and twelve volt batteries.



PURCHASE of the assets and business of the Sterling Die Company, Cleveland, Ohio by Pratt & Whitney Company, Inc., has been announced by A. H. d'Arcambal, Pratt & Whitney president.

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THE NEWTON COMPANY 55 ELM STREET • MANCHESTER, CONN. rolling dies, Sterling will be operated as the Sterling Die division of the Pratt & Whitney Company. No changes in plant location or in operation personnel are contemplated.

Herbert T. Yankee, founder and president of Sterling, will continue to direct its operations as vice president and general manager. The company manufactures a full line of dies to roll threads on bolts and on machine screws, wood screws and sheet metal screws.

\* \* \*

ALAN DAVIS, president of Viking Instruments, Inc., East Haddam, has announced a plan to double the plant and production facilities of the company.

New production facilities will be built on the company's present site at East Haddam. They will be among the most modern and efficient production facilities devoted to the manufacture of process controls, annunciator systems, alarm and special indicator systems and other electronic devices and instruments.

\* \* \*

THE NELCO TOOL COMPANY, INC., of Manchester, has purchased the building which houses its Berlin Branch, in Berlin. The company has added 4500 square feet of manufacturing area as well as four and a half acres of industrial property which is currently ear-marked for future expansion.

The new Berlin addition houses complete machining, heat treating and forging facilities for the production of high-speed steel tools, forged single point tools, carbide tools, as well as special carbide and high-speed steel tools.

\* \* \*

ENTHONE, INC., New Haven, has announced a change in name of its acid activating compound "Actane" (trademark registered). In view of this addition to the line of acid activators for various uses, namely, Actane 70, it has been decided that the use of a suffix number to designate the original product will eliminate confusion for those customers who might be using both products. There has been no change in the formulation or manufacture of Actane 22 (formerly called Actane).

★ ★ ★
STANLEY M. LOOMIS, member of

the board of directors of Burndy Engineering Company, Norwalk, and former controller, has been named treasurer of the company, it has been announced by Bern Dibner, president.

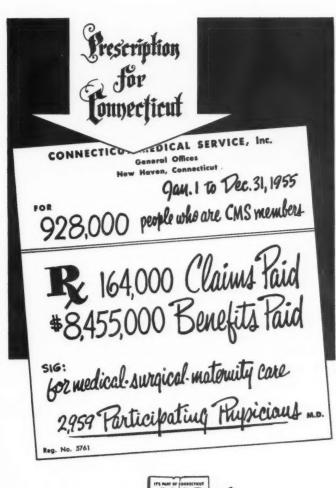
Julian Rogoff, former chief engineer, has been appointed vice president and manager of one of the company's two major divisions.

\* \* \*

AS PART of a large-scale expansion

program in the production of its LZ-5 helicopter, Doman Helicopters, Inc. will build a larger plant in Danbury. Formal presentation of a Civil Aeronautics Administration certificate for commercial use of this craft took place recently.

It was an important milestone in the history of the company. Hundreds of Doman executives, stockholders, military personnel and other friends of the corporation were present for the presentation of the CAA certificate by





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Ora W. Young, regional administrator of the first region of the CAA to Glidden S. Doman, founder of the firm, now vice president of engineering and chairman of the board.



THE RING-WING combines certain advantages of the helicopter and the airplane in that it can take off and land vertically as does a helicopter, and it can fly forward at speeds comparable to a conventional propeller or jet-diver airplane.

THE OFFICE of Naval Research has recently awarded The Kaman Aircraft Corporation, Bloomfield, a contract to conduct research on an annular-wing or ring-wing type aircraft.

The ring-wing can best be described as a "flying barrel" consisting of a circular or barrel-shaped wing which is open at each end and which has the body of the aircraft supported inside the barrel wing. The body of the aircraft is smaller in outside diameter than is the inside diameter of the barrel-shaped wing so that air passes

over the inside surface of the barrel wing as well as over its outside surface. The ring-wing can be powered by a conventional piston engine or a gas turbine driving propellers, or it can be jet propelled by a turbine engine.

Kaman has retained Dr. Manfred Rauscher of Zurich, Switzerland as consultant on the ring-wing project. Dr. Rauscher is one of the world's foremost authorities on aeroelastics and is the founder of the Aeroelastic Laboratory at the Massachusetts Institute of Technology.

\* \* \*

MORRIS F. KETAY, president of Norden-Ketay Corporation, Milford, and Stokley Webster, president of Gyromechanisms, Inc., have announced that Norden-Ketay has contracted to acquire all the assets, business, name and good will of Gyromechanisms, Inc., of Halesite, Long Island.

Gyromechanisms, which has approximately sixty-five employees will continue operations at its plant in Long

\* \* \*

THE AVAILABILITY of a new 3wire, 2-wire combination duplex grounding receptacle which provides for two separate circuits with a common ground has been announced by The Arrow-Hart & Hegeman Electric Company, Hartford.

According to the manufacturer, this new product makes it possible to supply, from the same outlet, the current to operate a window air conditioning unit, or similar appliance, which requires 3-wire, 15 ampere, 250 volt service for most efficient operation, and any other appliance needing only conventional 2-wire, 15 ampere, 125 volt service.

Catalog Sheet 26-G gives complete information on this new duplex re-





The problem of advertising successfully and profitably is one that keeps many companies and advertising agencies going round in circles.

Actually, straight thinking is what is needed.

At Remsen we have found that most advertising problems are not advertising problems at all.

They are problems in marketing: distribution, merchandising, sales promotion or public relations.

That is why we have the specialized personnel needed to give a complete service in marketing counsel.

Remsen men and women are now working on market research, new-product sampling, field surveys, distribution analyses and public relations programs.

All this is being done as a part of national advertising campaigns we are creating for our clients.

If you agree that it takes more than good-looking ads to move goods at a profit, we would like to talk with you.

Our approach to the problem of helping you to advertise successfully may be the difference that counts for you.

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ceptacle and may be obtained from the company.

\* \* \*

THIRTY-FIVE applications for the two scholarships available to sons and daughters of Pratt & Whitney Company employees have been received, it has been announced by President A. H. d'Arcambal.

The recently expanded Pratt & Whitney scholarship program pro-

vides for two scholarships, honoring former company presidents Clayton R. Burt and Frederick U. Conard, each for a maximum of \$1500 annually to cover college expenses. This is the first year that daughters as well as sons of company employees are eligible for the scholarships.

\* \* \*

R. WALLACE & SONS MFG. CO., Wallingford, has acquired from Pet Metal Products Co. the rights to manufacture a patented waste paper receptical known as "Tamp."

"Tamp" will be distributed by Brown Company of Berlin, New Hampshire, one of the largest manufacturers of paper products in the country, and will be nationally advertised as NIBROC TAMP.

The device automatically compresses used paper towles and other paper products into compact easily removable and disposable paper bags. This makes it possible to maintain wash rooms more attractive and at reduced expense.

E. B. Danzell, vice president of manufacturing of the Wallace company will be responsible for the production of this new product. E. P. Dolliver, manager of the company's special products division, will be responsible for sales.

+ + +

L. R. RIPLEY, president of the Heli-Coil Corporation, Danbury, has announced the purchase of the entire manufacturing facilities of the Towle and Son Co., Conshohocken, Pennsylvania.

Mr. Ripley said his company plans to move all Towle equipment to Danbury in the near future and combine the facilities of both organizations, with Towle as a division of Heli-Coil Corp.

Founded in 1928, the Towle company has been a leader in the field of precision manufacturing. It is equipped to handle work in a variety of different precision fields, including aircraft and electronics and has contracted for a large amount of government work, manufacturing precision components for gun mounts and armament.



CHARLES B. COOK, SR., retired vice president of the Royal Typewriter Company, and a member of the board of directors of the Royal McBee Corporation, died recently at his home. Mr. Cook had at one time served as a director and member of the Budget Committee of MAC.

Born in Syndenham, England, he came to the United States at the age of 17, and settled in Albany, New York. He worked for the Albany-Times Union in the circulation department. In 1907 he joined the Royal Typewriter Company as assistant manager of the company's first factory, a small plant in Brooklyn, New York.



Are you, as a firm, aware of our COMPLETE SERVICE comprising ALL these features?

- 1. Initial consultation and planning.
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- 3. Design an economical, reusable exhibit.
- Engineer, build and finish exhibit—pack and ship to Shows.
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- 6. Dismantle exhibit at close of Show.
- 7. Return to storage—often in our own plant.

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When Royal moved to Hartford in 1908 Mr. Cook came too, and three years later was made factory manager. In 1913 he was elected vice president in charge of production and a director of the company.

Mr. Cook, at his death, was a director of the Royal McBee Corporation, the Phoenix Fire Insurance Company, the Connecticut Fire Insurance Company, the Veeder-Root Company, the Spencer Turbine Company, Taylor and Fenn Manufacturing Company the Swift Chemical Company and the Silent Glow Oil Burner Company, of which he was also Board Chairman.

Twice honored by his community, Mr. Cook was presented with the Jewish War Veterans Citizens Award in 1947, and Trinity College bestowed an honorary master's degree on him in 1936.

Mr. Cook leaves his wife, two sons, Alan S. Cook, assistant to the president of Royal; Charles B. Cook, Jr., Roytype factory manager, a daughter, six grandchildren and six great-grandchildren.

# Eleven Years of Growth at ABA Tool and Die Co.

(Continued from page 8)

other is remarkably well preserved for

Even before moving out of the Grandview Street plant, ABA had done subcontracting work for the aircraft industry. The first sub-contract work was done in 1948 for the Pratt & Whitney division of the United Aircraft Corporation.

Shortly afterwards ABA started to do work for Hamilton Standard Division as well as for Fenn Manufacturing Co. of Newington, another sub-contractor, which turns out products for still another United Aircraft division, —Sikorsky.

Although primarily a subcontracting operation, ABA is always interested in manufacturing products for sale. The company does produce two proprietary items. One is a lathe-tracing attachment, called a D.C. Caufield Copy-Master, the other a magnetic sheet steed separator. The company started to manufacture these two items about two years ago to take up the slack during periods when business was slow. But slow periods have been few at the young and bustling ABA plant.



# Increase Your Product's "SELL" with Castings by FRITZELL



You can improve your product's sales, and performance after sales." Yes, you can help its ability to sell with: castings by FRITZELL; porosity-free, uniform in mechanical and structural strength batch after batch; castings that give your customers satisfaction long after your sale is closed!

Many of America's finest products

are made with castings by FRITZELL. Why not trade on this experience to make your product better?

Fritzell's ability to make intricate, sand-molded castings since 1916 has earned the reputation "If nobody else can make it, send it to Fritzell." Improve your product's "SELL" with quality castings by FRITZELL!



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Foundry & Casting Co.

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(Continued from page 16)

but in any event the amount being considered will not be sufficient to take the real load from the localities and the state. Many a school board is living in a dream world of waiting for Uncle Sam to do the job which it is their responsibility to present to their communities and their states. If the temporary construction program proposed by President Eisenhower and endorsed at the conference by Vice-President Nixon and Cabinet Secretary Folsom is provided, the big portion of the load will remain at home. Careful planning, imagination in looking for new answers to old or increasing problems, and the will to train tomorrow's citizens for the world they will face remains our biggest challenge in the view of this observer.

#### **Pre-Determining The Market Acceptance of New Products**

(Continued from page 17)

Even though your new product idea comes through the evaluation process with a high score, you have no absolute assurance that it will be a success. At this stage you are only dealing with probabilities. You have reason to assume that a market exists, that the product will be attractive to the market and that it would be possible for you to make the product and distribute it. You also believe that it will be possible to get facts that will either prove or disprove these assumptions. In the next section we will discuss ways to get facts about the first two assumptions.

If you have a market research department or agency, a general study of the markets for the new product will have started even before the idea was evaluated. Such studies will tell you how big the total market is, who the most important customers are and where they are located. They may also include average prices paid for products like the proposed one and some of the essential features that such a product should have. As soon as a model or prototype of the new product is ready, market research can begin to get comments and criticisims from potential customers so that information about the ultimate design, price and sale of the product can be accumulated.

Time Running Out? competitors getting ahead? Maybe: ... it's time to sell out ... it's time to reduce personnel ... it's time to retreat Probably: ... it's time to improve products ... it's time to analyze sales ... it's time to evaluate advertising R.H. Young and Associates



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Compare this with dictating your work on the Dictaphone TIME-MASTER dictating machine and DICTABELT record.

Man dictates independently any time. DICTABELT record captures what he says unmistakably. Secretary types directly from clear DICTABELTS—contact types directly from the contact of the co

trols volume, tone, speed. Result? Faster, cheaper, more accurate communication.

Other DICTABELT advantages: flexible, unbreakable, permanent records, can be mailed or filed like a letter. Can't be erased by accident. Visible dictation makes quick place-finding. Most economical—average day's dictation for stamp money.

For more facts, write Dictaphone, 420 Lexington Avenue, New York 17, N.Y. or call the Dictaphone office in your city.



DICTAPHONE CORPORATION

In Canada, write Dictaphone Corporation, Ltd., 204 Egilnton Ave East, Toronto...in England, Dictaphone Company, Ltd., 17-19 Stratford Piace, London W.1. Dictaphone, Time-Master and Dictabelt are registered trade-marks of Dictaphone Corporation.

If you have to get this information yourself or rely on a few salesmen to do so, you will have to follow the same general procedure. The first step is to list all the possible markets for the product and then narrow the field down to the most logical ones. The next step is to make a sample that will approximate the final product as nearly as possible. If a sample or model

is out of the question, at least prepare an attractive drawing or photo and a good description of the product's properties. When these steps are taken you are ready to reach for your hat and go see people.

There are two approaches to the market testing of a new product. There is the qualitative approach and the quantitative approach. By the qualita-

tive method you seek out people who are qualified experts in their field and get their opinion. Such might be buyers for mail order houses, chains, large jobbing concerns, or industrial buyers. The qualitative method works very well for industrial products or for consumer products that you intend to distribute through large retail or jobber organizations.

If you intend to sell your product directly to consumers or to deal with a number of small retail establishments you will probably use the quantitative method. By this method you get the reaction of a large number of consumers, chosen at random, to your product. This method is relatively expensive and should be carried on by a market research agency which has had experience in such surveys. They have techniques for doing such work which will get you the answers at minimum cost.

Obviously, if the production cost of the new product is low and a few talks with buyers convince you that you are on the right track, the next logical thing to do is to put the item into production and sell it. Where production costs are high however and tooling is expensive you must rely on market research methods to find out as much as possible about the market and the final design of the product before you spend money for tools and equipment.

If you do your own research you must think of yourself only as an impartial investigator and set aside any enthusiasm that would interfere with your objectivity when you are asking questions and recording answers. This is a hard thing to do and the reason why large companies seldom rely entirely on their salesmen for market testing. When you set out to do qualitative research be sure to see enough people. Don't launch your product on the say-so of one "important" buyer. See just as many of them as you can, and make very sure that they are not merely being polite.

It is wise to plan your questions in advance and ask the same questions of each person you interview. Record the answers and when you have completed several interviews set them up in tabular form. Also, record and save every bit and piece of information that you hear about the market during your interviews. After all, if your first new product is successful, you may want to go to the well again and again.



# Connecticut — A Good State for Industry Industrial Construction Increase 32% In a Single Year

In 1955 \$47,896,000 was awarded in industrial construction contracts. This was an increase of \$36,165,000 or 308% over 1950. Perhaps more indicative of the dynamic industrial growth, is the increase of 1955 over 1954 which was a startling 32%.

What fosters such a growth as this? Certainly from the picture painted by many people in other sections of our country it should not be happening to any state in New England. The truth is New England, as a region, is traveling economically upward and its leading industrial state, Connecticut, matches or surpasses the absolute growth of virtually every state in the union.

Let's take a more thorough look at Connecticut's thriving industrial econ-

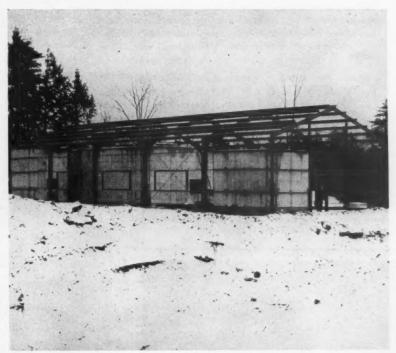
Connecticut has an industrial base which encompasses 75% of the major industry groups as classified in the U.S. Census of Manufacturers. A large percentage of this manufacture is in metal-working industries which are experiencing a steady and rapid growth. This increase in the durable good industries has more than taken up the slack created by the lessening of textile employment. Connecticut's manufacturing employment has, in fact, grown 29.3% from August 1940 to August 1954.

Although the state ranks 46th in area and 28th in population among the 48 states, it consistently ranks higher than that in production and earning statistics. Connecticut is first in per capita defense contracts awarded and third in per capita income payments to individuals. Further, the state stands 11th in total factory wages paid, 12th in value added by manufacture.

Increasing industrial activity has fostered a general business increase of 52.6% since 1944, a per capita income increase of 48.6% since 1945 and an effective per family buying income of \$6786 as of 1954 which was 1st in the nation.

Our states' industries have not only increased their plant capacity at a phenominal rate, they have also kept abreast of technological advances and incorporated them in existing productive processes.

During the period between 1947 and 1953 value added by manufacture



February 1956. Beginning of a giant research center for Combustion Engineering Corporation in Windsor, Conn.

increased 67.2% from \$1,896,540,000 to \$3,192,556,000. During this same period manufacturing employment increased 11.1% from 412,000 to 458,-000. Comparison of these two figures shows that value added per employee increased from \$4600 to \$6960 an increase of \$1360. A large part of this increase can be attributed in increased use of mechanization and automated processes. Connecticut's progressive electric utilities have aided in the planning and installation of mechanized or automated production facilities and they are continually planning for expansion in order to serve the demand such modernization places on their productive capacity.

Industry outside of Connecticut is also showing more interest in the state as evidenced by the recent branch plant locations of such companies as Combustion Engineering, American Radiator and Standard Sanitary Corporation and Jones and Laughlin Steel Corpora-

These figures are but an indication of the healthy and active economic picture of Connecticut. This state can provide versatile skilled labor acknowledged as the equal of any in the world along with living conditions second to none. Our towns are progressive in planning for their growth yet stable in governmental and financial process. Connecticut has a concentration of educational facilities which are the envy of the nation and a location convenient to national and foreign markets. It is easy to see why Connecticut has grown as it has and why it cannot help but grow even more prominent as the Nation's best state for industry.

The Connecticut Light and Power Company, The Connecticut Power Company, The Hartford Electric Light Company, The Housatonic Public Service Company, The United Illuminating Company.

# THE PEOPLE BEHIND the PRODUCTS At American Thread

A Company's success is largely determined by the ability of the men and women who make up the organization. American Thread has been a successful member of the Willimantic Community for 58 years which is certainly a testimonial both to our employees and the products they make.

During this time the Company and the people on its payroll have made every effort to be good citizens—contributing to and participating in the city's growth. This series introduces some of the Willimantic citizens who help make the thread and yarn products which are among the finest made anywhere in the world.

THE \$7600 QUESTION—Eyebrows would be raised if you read an ad for an American Thread job requesting the applicant to bring \$7600 for the purchase of tools and equipment before he could go to work. True, it isn't being done. But just as true is the fact each job in the company costs \$7600 to provide. This is the investment for tools, plants and equipment per employee.



IT'S GOT TO BE UP TO PAR – Johnson's job keeps him busy supervising American Thread Co.'s "Seam Engineering" program – recommending best thread and number of stitches needed for various types of seams in clothing submitted by manufacturers. Johnson also supervises American Thread Co.'s testing program for constant improvement of current products, development of new ones.





ROGERS L. JOHNSON-Research technician with American Thread Co. for 12 years, 34 year old Johnson was born in Newport, R. I., has a Bachelor of Arts, Master of Science in mathematics from Brown University. He came to American Thread Co. straight from college, has since taken special textile courses at Clemson College and Massachusetts Institute of Technology.



FOR WORK WELL DONE—Johnson presenting Merit Badges to (l. to r.) Jack Hardwick, Rudolph Lekerczyk, Frank Lincoln, Alfred Beauregard. The boys are all members of Boy Scout Troop 32. Johnson has been Assistant Scoutmaster of the group since 1943.



PHILATELIST—While mother, Mrs. Ethel P. Johnson, watches, Johnson works on stamp collection in their home at 33 Pennywood Lane. Johnson is also active in Willimantic Junior Chamber of Commerce, of which he is a Director, charter member, past secretary, past treasurer. Last year, Johnson chaired March of Dimes drive for Town of Windham, organized it as cooperative effort among Willimantic service clubs. Drive went over its quota, won U. S. Jaycee First National Award in Population Class for Public Welfare Funds for Willimantic chapter—"Spark Plug and Key Man Award" for Johnson.

#### **HOW WOULD YOU DECIDE?**

In this department each month there will be published labor A relations grievances that were settled by arbitration. Read the grievances and check your opinion against the arbitrators ruling. Selection of cases made by MAC counsel.

May an employee be discharged for a series of violations of company rules, no one of which is offered as justifying the discharge?

Here's what happened.

As in every well run plant, the company adopted shop rules which were admitted to be reasonable and which all agreed were within the right of the company to establish. They were not a part of the union agreement but a copy was given to the union and they were generally known by the employees. The employee involved was a union steward and although he claimed he never saw a copy of the rules prior to his discharge he did admit he knew he was not supposed to do the things with which he was accused by the company as violations of company rules. No attempt was made to justify the discharge as a violation of any specific rule but rather for a series of violations of a number of different rules.

Do you feel there should be a major breach of discipline to justify discharge or is it sufficient to prove a continuing practice of minor violations?

The arbitration board agreed with the company that a continuing course of action disrespectful of authority, and continual violations of reasonable rules add up to a sound basis for serious discipline and are proper cause for discharge. Some of the violations were attempted to be excused by the union on the ground they resulted from an attempt by the employee to give adequate service to the union members in his capacity as a union steward. To this the board pointed out that because he was a union steward his observance of rules should be on the side of good example rather than to the contrary, as the evidence sufficiently established.

When the company is required to pay four hours call-in pay and the

work in the employee's classification runs out can he be assigned to other work?

Here's what happened.

Under the contract the company was required to furnish four hours work or give four hours pay when an employee reported for work unless he had been notified not to report. On the day in question the employee's incentive work as a grinder ran out, after working less than two hours, following the starting time of the shift. He was then assigned to

cleaning up around his own machine, which he did, and then was requested to clean up around other machines in his department. He objected on the ground that the work was outside of his job classification and further that it was undignified and humiliating. The relief sought in the grievance was a ruling that an employee could not be required to perform such work outside his job classification in order to qualify for reporting pay.

The company contended that it had no intention of making unreasonable requests which might humiliate the employees but that the cleaning work assigned was similar in nature to that normally performed by the employee and was a proper exercise of management's right to furnish four hours work since it was required to pay four hours pay at the employee's regular rate.

Would you consider the company was justified in utilizing the employee's time for the remainder of the four hours in that manner?

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The arbitrator pointed out that this was a temporary assignment only, which involved an extension to other machines within his general work area of job duties he normally performed as part of his regular work. There was no indication that humiliation was intended or existed and since there was no other work more closely related to the employee's major job duties the company was justified in assigning the employee to that work during the four hours for which it was required to pay him.

\* \* \*

How long must an employee be given to comply with a written warning?

Here's what happened.

A group leader held frequent and lengthy conversations with one of the female employees under his supervision and admitted that the number of such conversations was excessive. He was given repeated warnings aimed at correcting this condition but the effect of these warnings and promises to rectify the condition always seemed to wear away in a couple of weeks and the condition became as bad as ever. Finally the foreman gave him a written warning. The following morning the employee engaged in a half hour conversation in violation of the warning and was discharged.

Should he be given another chance?

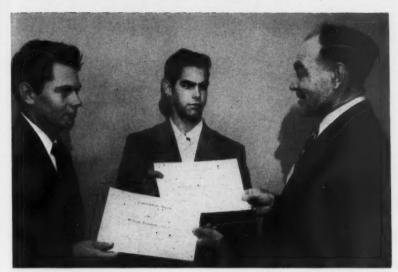
The arbitration board considered that the employee's conduct was wrong and the company had every right to expect it corrected. The board even felt that the company had been patient in awaiting a reform and that the written warning might have affected that reform had the opportunity been allowed. However, it did decide that the discharge by the company was hasty and that the employee should be given further opportunity to show the company that he had taken the warning seriously. The board did not state how long such an opportunity should continue.

#### Sixth Annual Conservation Conference Features Causes, Effects and Remedies of Floods

(Continued from page 18)

A. L. Polley, vice president, Hartford Fire Insurance Co.

Among the chief recommendations made to control floods in the future were: The construction of dams, dikes and reservoirs, flood plain zoning and proper land management.



WILLIAM BRACKEN, Watertown, and Coddington Billings, Stoninton are shown receiving Conservation Award certificates from Dr. Raymond Kienholz, Professor of Forestry, University of Connecticut.

Conservation awards for outstanding conservation accomplishments were presented to William Bracken of Watertown, and Coddington Billings of Mystic, who were nominated for the awards respectively by Future Farmers of America and the 4-H Clubs. In a third award, Austin F.

Haines, retired state forecaster, was named "Conservationist of the Year" by the Council.

A graphic display of the causes and effects of floods in the Connecticut River watershed, exhibited in Boston recently, was also a feature of the conference.

The exhibit consisted of a blown-up map of the entire Connnecticut River watershed from Long Island Sound to the river's source close to the Canadian boarder. Spotted on the map are flood control dams already in existence and others projected for the future and already approved by the Interstate Compact Commission.

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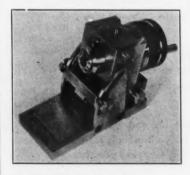
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#### **BUSINESS TIPS**

from

School of Business Administration
University of Connecticut

# Advertising and Automation or, How to Prepare For The Marketing Revolution

By ROLAND B. SMITH, Associate Professor of Advertising University of Connecticut

AUTOMATION has become a popular term. It is used variously to describe a process performed automatically which was once performed manually. As the term is used here, automation refers to mechanical selling or automatic vending without benefit of salesmen.

The shift away from personal selling toward self-service by customers and still further toward automatic vending by machines has progressed rapidly. It has been predicted that the mechanizing of distribution can be expected to effect marked changes in our marketing structure within the next 15 years. Actually the term "Marketing Revolution" is heard with some frequency to describe the future.

What effects might all this have on advertising? Advertising has been called "Mechanized Selling" since it can perform without the aid of personal salesmanship several of the steps in the sales process, e.g. attract attention, arouse interest, stimulate desire, etc. Considering many products currently being bought from vending machines and from self-service stores, advertising can be credited with having performed a very large part of the selling function.

With this background advertising business is probably better prepared for automatic, mechanical selling than are other phases of marketing. Consequently, the impact of automation will likely be less. Notwithstanding, the effects will be felt. The product will be affected, as will its package. Advertising techniques will be influenced. In summary, products will have to be good to survive, although technical differentiation will likely diminish. The package must work harder than ever before to protect, identify, and to sell its contents—both before and after purchase. Advertising as a marketing tool must do a more complete selling job and it will have to be more educational in content if less persuasive in tone. We may expand a little on these three points.

#### The Product

It is hardly possible without benefit of patents to retain a technical product feature exclusively for more than, say, three to six months. No producer has a monopoly on engineering and pro-

ductive talent, and copying is too profitable to be resisted. Hence product differentiation in the technical sense can be expected to diminish, and what differences persist will be largely superficial, methodological, and—highly subjective within the consumer. (Leading toilet soaps are a present day example. They vary in color, in perfume, in package, in shape, but they all cleanse.)

Quality control will come in for greater attention as it becomes increasingly necessary for products to meet the advertised standards of performance. (Of course, if the product is produced by automation the control of quality is implicit in its manufacture.) Returning the unused portion to "get your money back" may not assuage the hurt of consumer disappointment or dissatisfaction. Indeed some new method of handling such complaints will doubtless be needed.

#### The Package

Mechanical selling implies packaging for most products. It is none too soon to consider present packages for maximum protection against time, heat, light, cold, dampness, dryness, impact, insects and germs. Packages might also be reviewed for size and shape and adaptibility for automatic vending.

In addition, packages should be studied for maximum identification, selfselling ability, and for clarity and completeness of instructions for use.

Because it takes time for changes in a package to be learned and accepted by consumers an early start toward revamping may well prove worth-while.

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Charles H. Walters, President

<sup>&</sup>lt;sup>1</sup> For a highly rated discussion of automation and its meaning for marketing see the report of a speech by Peter Drucker before the American Marketing Association Convention, New York, 1955, Advertising Age, January 23, 1956, p. 55.

# highest quality photo engraving<sup>s</sup> from line plates to four color process shuttleworth. inc.

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#### Advertising

For the advertising of many products automation may have far reaching effects. Brand preference will have to be built largely on subjective grounds. This means a bigger job for advertising to establish the product as the best means toward the consumer's goals, i.e. the best solution to his problems. This, in turn, will attach added importance to consumer motivation research in order to find what consumer needs or wants are subject to satisfaction through the purchase and use of the advertised product.

Second, while advertising is creating desire for a product, it must also minimize or eliminate the prospect's fear that he might later regret the purchase; (very important to the buyer as he stands before some vending machine). This means advertising must supply full and complete information so as to leave no reasonable questions unanswered. Claims must be not only true, but believable. Guarantees must be simple, clear and meaningful. In short, advertising will need to be more educational even at the cost, if need be, of being less directly persuasive. The advertiser's goal might well be conversion rather than conviction.

With automation advertising will come into its own as an efficient marketing tool, provided, of course, management is prepared to use it properly.

#### The Sibley Company Story

(Continued from page 10)

stallation in a much smaller area than would be possible through conventional hand wiring.

To give some examples of the miniaturization possible through such a process, one eastern manufacturer is producing a complete radio transmitter including microphone, circuit and power supply within a plastic housing  $2\frac{1}{8}$ " x  $2\frac{5}{8}$ " x  $\frac{7}{8}$ "! There are at least five types of subminiature 132-144 mc. radio transmitters consisting of circuits "printed" on the glass envelope of a single tube  $\frac{3}{8}$ " in diameter and  $\frac{1}{4}$ " long; they require only connection to a microphone and battery to operate.

Today, The Sibley Co. is supplying an ever increasing number of the nation's electronic manufacturers with "pre-fabricated" circuit panels. These shock-resistant panels are smaller, more

reliable, easier to install and service. and lower in cost than the conventional maze of complicated hand wiring and soldering. Manufacturers of electric games, household appliances, communication and business machines, and highly specialized devices so essential to our national security program, are finding that printed commutators and circuits reduce production bottlenecks by allowing unskilled labor to assemble complex circuits faster and with little chance of error. Because of the complexity of modern wiring circuit systems many firms find that servicing after installation is an acute problem. The ease of replacing defective subassemblies in a complex installation introduces new possibilities in manufacture and maintenance, particularly applicable to rural and foreign markets where maintenance is a difficult problem. By the use of plug-in connectors, different units of sub-assemblies can be removed, tested and replaced without time-consuming individual circuit tracing often by inexperienced service personnel. In many cases, complicated repairs can be made "in the field", thus eliminating return of equipment to the factory.

Another significant advantage of printed circuits is that once manufactured, they are less likely to be tampered with, for tampering is readily detected. A manufacturer who places a guaranteed device on the market has certain assurance that his designed circuits will not be altered and escape detection.

Certainly a marked advance has been made in the field of printed circuits but many problems of materials and procedures are still to be solved. At the Sibley Co., a separate research and testing department has been established in order to offer its customers and potential customers the fullest possible assistance in designing and adapting 'pre-fabricated" circuit assemblies to their production lines. Also, research and experiments are being conducted to improve present methods, and in developing better commutators and circuits on glass and quartz for performance under severe operating requirements and locations.

The position of the Armed Services is;—"We want electronic equipment that takes up no space, weighs nothing, but will do everything." Perhaps we almost have this in the form of printed circuits, and if so, Connecticut's printed circuit manufacturers, like the Sibley Co., will have a large part to play.

# SPOTLIGHT ON THE FUTURE\*

By MARSHALL PEASE
Assistant Manager of Purchases
Detroit Edison Company
Detroit, Michigan

#### **General Business Conditions**

The February survey confirms the slight leveling off in industrial business conditions that was reported in January by Purchasing Executives. While the February figures on production (better 32%; same 56%; worse 12%) remained about the same as the January percentages (33%; 54%; 13%, respectively), the new order position for February is reported to have declined slightly. Only 30% see improvement: 52% report the position to be the same, and 18% show a decrease, in comparison with last month's 34%, 48% and 18%, respectively.

Commodity prices remain high, with a minor modification of the rate of upward trend. Inventories of purchased materials climbed slightly. Employment continues good, with many again expressing concern over the shortage of skilled and technical personnel. Buying policy reflects a middle ground pattern, with production materials and MRO supplies strongest in the 30- to 90-day range.

On a special question asked this month, the predominant opinion is that the supply-to-demand ratio for materials will improve. Of those who reported, 62% feel it will definitely ease, while 28% expect no change in the next six months. Only 10% anticipate any worsening of the situation.

#### **Commodity Prices**

The reports this month show a slight reversal of last month's trend in price advances. This month, the number mentioning price increases dropped 5%, to 58%, from 63% in January. Similarly, price decreases were reported by 3% in February, as against none in January, while 39% found prices remained the same, compared with 37% who so reported last month.

Although the reporting percentages indicate a slight weakening in the general price structure, most Committee members comment that they see no immediate prospect of relief from current high prices.

#### **Inventories**

In February, 30% of the purchasing agents surveyed report inventories higher than a month ago, compared with 23% in January. They indicate the movement reflects seasonal patterns, automotive cutbacks and lowered consumption of stocks. 55% reported inventories to be the same, compared with 60% in January; and 15% reported them to be lower, against 17% a month ago.

#### **Employment**

There is still no indication of a reduction in employment rolls. While 9% reported in February (against 8% in January) that employment is lower than a month earlier, the slight rise is generally considered to reflect seasonal or local conditions. Again this month, 71% report employment to be

the same, and 20% (against 21% in January) say employment is up over a month ago. Skilled and professional help, especially engineers, remain on the scarcity lists. Many also continue to mention shortage of competent stenographic and clerical applicants.

#### **Buying Policy**

The Committee's February reports indicate a middle of the road trend in purchasing policy. For production materials, there were 36% reporting in the 90 days plus level and 5% on a hand-to-mouth basis; last month, the figures were 44% and 3%, respectively. However, reports show 21% in the 30-day bracket and 38% planning 60 days, while in January those percentages were 24% and 29%, respectively. On MRO supplies, 13% say hand-to-mouth; 40% plan 30 days; 30% report 60 days, with 17% at 90 days plus. For capital goods, 74% report coverage of 90 days or better.

#### **Specific Commodity Changes**

Steel continues to dominate the price and supply situation.

On the price up side are: Brass, copper, steel, castings, steel plates, steel bars, steel pipe and fittings, zinc, selenium, linseed oil, paper, fuel oil, coal, some insulating materials, cement.

On the down side are: Steel scrap, mercury, cocoa, rubber.

In short supply: Aluminum, copper, nickel, steel (structural, castings, plate, sheets, stainless, wide flange beams, pipe), titanium dioxide, selenium, paper, kraft paper, fuel oil, glass, cement, bearings.



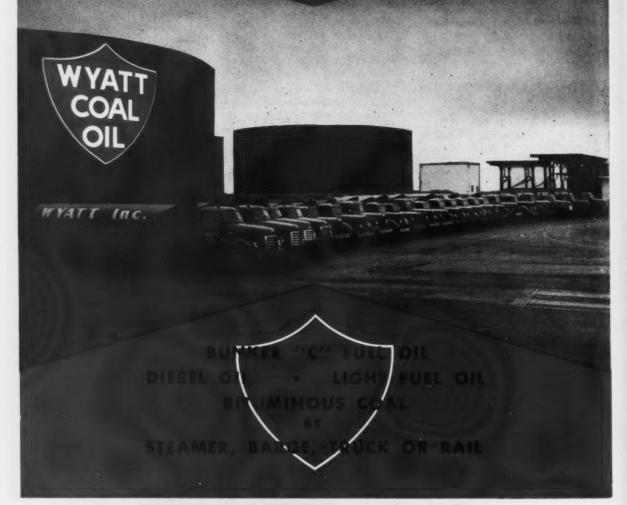
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<sup>\*</sup> Composite opinion of purchasing agents who comprise the N.A.P.A. Business Survey Committee, whose Acting Chairman is Marshall Pease, Assistant Manager of Purchases, The Detroit Edison Company, Detroit, Michigan.

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#### **ACCOUNTING HINTS**

Contributed by the Hartford Chapter National Association of Cost Accountants to stimulate the use of better accounting techniques in industry.

# What a Flood Taught About Records Storage

THE disastrous 1955 flood through Connecticut's industrial sections pointed up some interesting and vital principles for filing and maintenance of records. Preliminary investigation reveals the following:

1. Filing systems, even in small concerns, should be somewhat decentralized for filing similar information. As an example of this need, one incident stands out. A small concern with \$80,000 in accounts receivable moved its customer records to the balcony when the flood notice came, feeling that these records would be safe. Because of the height to which the water rose, these records were swept away without a trace. Luckily, a recent copy of the aging accounts re-ceivable had been filed in another place. This list provided a basis for establishing new records at a time when collections were urgently needed. Although invoices from the date of the aging list had not been washed away, all records of cash receipts were gone. De-posit slips were obtained from the bank but they did not identify the individual checks. It was necessary to look at 400,000 microfilmed checks at the bank to identify the detail on the deposits.

Written accounting records should be in waterproof ink or pencil. Examination of some records revealed that waterproof ink remained legible, whereas other types of ink washed away. Pencil figures also retained their legibility. The use of red ink may result in transferring red marks to other pages and smearing them.

 Machine records and typed material stood the test of water-soaking without much damage. Many records, such as accounts receivable ledger cards, were made usable again by sterilization and ironing. The binding of machine-produced records should be considered, since bound records were more frequently recovered. Time cards of employees were lost in many instances and it was necessary to make wage payments on the basis of employees' recollection of hours worked.

A factor to be considered in filing valuable papers is the susceptibility of the storage place to floods. Company vaults were considered fairly safe against fire, wind, or theft. However flood waters did not respect the iron doors and many valuable papers were soaked and covered with silt. It should be pointed out that the water reached the height of about twenty feet, which meant that one-story buildings were entirely submerged in the flood areas. The water came so rapidly and forcefully that doors were broken and water surged through buildings, carrying away documents of all sorts. Many firms were successful in moving out some of the essential records before the water reached them. However, in this emergency (it happened more often than one would like to admit), it was discovered that less important papers were saved at the cost of losing more important ones. Evacuation, in any case, cannot be relied upon because trafficways are crowded at such a time with vehicles moving property.

Punched cards, if covered with water, absorbed the water and

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swelled. In some cases, the swelling broke the filing cabinets. However, if the cards were compressed in filing, it has been estimated that ninety per cent could be reproduced mechanically. Those cards which could not be reproduced mechanically could be read and reproduced by a key punch operator.

- Microfilmed records should be stored out of possible flood areas. In microfilming, precautions should be taken to see that photographs are made of all documents to be preserved in the filming pro-
- gram. In one case it was discovered that papers had stuck together, resulting in photographing only the top sheet in several groups of papers.
- Reports on insurance coverage prepared by accounting departments should point out whether such a program includes flood loss coverage. Many executives were not immediately aware that standing fire and extended policies did not cover flood losses.

Undoubtedly many other lessons will come from the flood situation in the interest of accounting records which can be used not only to avoid losses caused by floods but also from fires, hurricanes, bombings and other forms of disaster.

#### The Tail That Will One Day Wag the Dog

(Continued from page 13)

ceiver installation, power costs would be less than one and one-half cents per hour.

First cost and upkeep are low enough to produce general acceptance of TV, in industry, with the result that more and more of the electronic manufacturers are planning all-out drives for business in this field.

Most active among Connecticut suppliers are Graybar Electric for Diamond Power Specialty Corp., Hatry for Blonder-Tongue Laboratories and Robert A. Waters, Inc. for Dumont, although R.C.A., General Electric, Dage, Westinghouse and others are planning 1956 campaigns.

Several Connecticut representatives have already conducted showings of their products to invited customers and engineers, and are planning more demonstrations for the coming year.

As plant engineers and executives become more familiar with the available equipment, the tiny tail of industrial TV will grow more and more rapidly. Contributing to the coming swing to automation, industrial TV will itself be stimulated by it. The tail on the TV industry will then "wag the dog".

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#### **TAXATION**

By C. H. SCHREYER

Attorney

#### **Use of Accelerated Depreciation Methods**

Since the enactment of the Internal Revenue Code of 1954, a great deal has been said about the advantages—and possible disadvantages—of using one or another of the accelerated depreciation methods permitted by the Code for new depreciable property acquired or built after January 1, 1954.

The depreciation method most commonly used by taxpayers before the 1954 Code was the straight-line method, by which the cost or other basis of depreciable property is depreciated evenly by the same percentage each year over the useful life of the property, so that the entire cost, less salvage value, if any, will be written off by the end of the period of useful iife. It has long been felt by many businessmen that this method of depreciation is unrealistic in that it fails to take account of the fact that the actual economic depreciation of a new asset in the early years of use is considerably higher than in later years. A common illustration of this is a new automobile; everyone is aware of the fact that the loss in value of a car is greatest in the first year and least in the last year of use.

The 1954 Code took cognizance of this fact by permitting two liberalized methods of depreciation which are designed to permit greater depreciation deductions of a new asset in the early years of life, with a corresponding decrease in the allowances permitted in the later years. Over the long run, the aggregate amount of depreciation allowed under these methods will be no greater than the amount permitted by the use of the straight-line method, since in each case the total depreciation allowance may not exceed the cost or other basis of the property.

Nevertheless, many businessmen and accountants believe that there are several distinct advantages in using the accel-

erated depreciation methods permitted by the 1954 Code. In the first place, these methods bring the annual income reported for tax purposes more closely in line with the actual profits earned each year. Again, these methods result in tax savings on new acquisitions which makes it easier to modernize plant equipment. Finally, many people feel, rightly or wrongly, that the present high tax rates are more likely to go down than up in later years, so that it is advantageous to reduce present taxable income as much as is consistent with sound business and accounting practice. Conversely, of course, if tax rates should go up above present levels, the use of an accelerated depreciation method could result in an over-all tax loss.

The two principal methods of accelerated depreciation specifically sanctioned by the 1954 Code are the declining-balance method (using a rate up to twice the permissible straightline rate) and the so-called "sum of the years-digits" method. Under the declining-balance method, a uniform percentage-up to twice the percentage permitted by the straight-line method is applied each year to the cost or other basis after it has been reduced by the amounts of depreciation taken in prior years. For example, if a truck with an estimated useful life of five years is purchased at a cost of \$5,000, the straight-line rate would be 20% of \$5,000 each year, or \$1,000, assuming no salvage value. Under the declining-balance method, the annual depreciation rate would be 40%, applied to cost less depreciation taken in prior years. Thus, the depreciation on the truck in the first year would be \$2,000; in the second year it would be 40% of \$3,000 (\$5,000 less the \$2,000 taken in depreciation in the first year); and

The declining-balance methods de-



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preciates 40% of the cost of an asset in the first quarter of its service life and two-thirds of the cost in the first half of its life. One disadvantage in the use of this method is that the amount of depreciation permitted will never equal the full cost of the asset, since the application of the same percentage each year to a declining balance will always leave a further balance. This defect has been taken care of in the 1954 Code by a provision which permits a taxpayer to switch at any time from the declining balance method to the straight-line method.

The second method of accelerated de-

preciation specifically authorized by the 1954 Code is the "sum of the yearsdigits" method which results in approximately the same pattern of depreciation as the double-rate decliningbalance method. One important advantage of the sum of the years-digits method is that it does provide for full depreciation of the cost of an asset within the period of useful life. Perhaps the simplest way of describing this method is by illustration. In the case of the \$5,000 truck with a five-year life mentioned earlier in this article, the rate of depreciation the first year would be 5/15ths of \$5,000, or \$1,666.67; for the second year the rate would be 4/15ths of \$5,000, or \$1,333.33; for the third year the rate would be 3/15ths of \$5,000, etc. In other words, the denominator of the depreciation fraction, which is the same each year, is the sum of the numbers representing each year of useful life. In the case of an asset with a five-year life, the denominator is therefore 15, being the sum of 1, plus 2, plus 3, plus 4, plus 5. The numerator of the fraction for a particular year is the number of the

Besides the above-mentioned advantages of using either of the two methods of accelerated depreciation specifically authorized by the 1954 Code, they offer another potential advantage of considerable importance. As has been pointed out, the use of either of these methods permits greater deductions and thus smaller taxes in the early years of use, which is offset by smaller deductions and attendant higher taxes in the later years. In a sense, therefore, accelerated depreciation has the effect of deferring taxes with respect to the depreciation of any particular asset until the later years of useful life.

year taken in reverse order.

Very little publicity has been given, however, to the fact that under certain circumstances this temporary tax

deferment can be converted into a permanent tax deferment. Take the case of a company which has established a 15-year life on machinery and equipment for depreciation purposes, and which plans to spend a minimum of \$1,000,000 a year in new equipment for the next 15 years and an indefinite period thereafter. On the assumption that the present tax rate of 52% will remain unchanged during the next 15 years, the use of the sum of the years-digits method instead of the straight-line method would result in an extra allowance of \$2,188,350 over the first 15 years following the adoption of the sum of the years-digits method. Translated into tax savings at a 52% tax rate, this would amount to \$1,137,-942 over the period. Thereafter, as long as the replacement level of at least \$1,000,000 is kept up, the depreciation allowance under either method will be the same, leveling out at a rate of \$1,000,000 a year in each case. This result is illustrated by the following

Years		Straight- Line Method	Years- Digits Method
1955		\$ 33,450	\$ 62,500
1956		100,100	179,700
1957		166,750	289,100
1958		233,500	390,650
1959		300,050	484,400
1960		366,700	570,350
1961		433,350	648,500
1962		500,000	718,800
1963		566,650	781,300
1964		633,300	836,100
1965		699,950	882,900
1966		766,600	921,950
1967 1968		833,250	953,200 976,650
1969		899,900 966,550	992,250
1970		1,000,000	1,000,000
1971		1,000,000	1,000,000
TOTAL	1 -6 - A -1	\$9,500,000	\$11,688,350
		. =====	
Minus-str	preciat		\$ 9,500,000
Accelerat	ed de	preciation	\$ 2,188,350

x Tax rate Permanent tax deferment \$ 1.137,942

Of course there will be variables from year to year in the factors contributing to this result. Tax rates will vary and replacement programs will change from time to time according to changing business conditions and corresponding changes in replacement policy. If the treatment of corporation tax rates over the next 15 years should be upward, the tax savings resulting from the use of the years-digits method in the above illustration would be reduced. On the other hand, if the trend of the corporate tax rates during the

(Continued on page 60)





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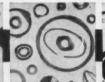
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#### TRANSPORTATION

By EDWARD M. MAMULSKI Traffic Manager

#### **Rail Transcontinental Class Rates**

Y AN order dated August 17, 1950, the Commission began an investigation of the lawfulness of the classification ratings and the class rates within mountain-Pacific territory and between that territory and the remainder of the United States. The Commission designated this proceeding as docket number 30660. The first hearing in this case was held in December 1953 at Washington, D.C. During the years of 1954 and 1955 the Commission held hearings at Salt Lake City, Utah; Los Angeles and San Francisco, California: Seattle, Washington; Milwaukee, Wisconsin; and Phoenix, Arizona in connection with this investigation.

During the course of this proceeding, consideration was given by the Commission to extending the 28300 scale of rates to the west coast and within mountain-Pacific territory. The railroads and the carloading companies claimed that the 28300 scale of rates was not suitable to the carriers for the longer distances. The railroads contended that if the 28300 scale of class rates was extended to the territories covered in this investigation, they would lose an estimated \$34.5 million dollars annually.

At the opening hearing the western railroads proposed a new class rate scale. This scale was based on shortline rail distances between points in mountain-Pacific territory and between that territory and the remainder of the United States. While the new class rate scale had no direct or fixed percentage relationship with the 28300 scale, it has the same mileage block progression as the 28300 scale. For use in connection with the new rate scale, the western carriers propose to create 500 new rate groupings similar to the ones now used in the 28300 territory. The level of the new rates would be higher than the 28300 scale of rates but lower than the present level of class rates. The present first class rate from Connecticut points to the west coast is \$11.72 while the new rate would be \$9.38.

The new class rates proposed by the western railroads are predicated upon practically the same rate formula as the transcontinental commodity rates.

The last major transcontinental class and commodity rate revision took place in 1912. At that time the rail first class rate from New York City to San Francisco, California was fixed at \$3.70 per hundred weight and all other transcontinental class rates between these two points and the west coast were graduated downward from this rate.

A different formula was used for transcontinental commodity rates. The commodity rates for territory "A" which includes such points as New York City as well as, all stations in Connecticut, were fixed at a level 20%

Listed below are a few comparisons of the new rail L.C.L. transcontinental rates between New York City and Seattle, Washington, with the present rates charged by competitive transportation agencies:

Commodity	Proposed Rail-Class Rates	The 28300 scale	Car- loading rates	Intercoastal Steamship rates
Drugs, cosmetics, medicine	6.57	5.92	5.76	2.75
Machinery, NOIBN, SU	8.68	7.92	6.33	2.81
Hardware, Brass, et cetera	7.27	6.56	5.76	3.45
Cotton piece goods	5.16	4.65	5.36	2.05



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above the Chicago rates. The commodity rates between these points and the west coast were graduated downward from this percentage. Except for general rate increases or reductions, the present rate formula for both the class and the commodity rates has been in effect for the past 44 years. The new class 100 rate from territory "A" to the west coast is fixed at a figure which is 20% above the Chicago rate.

The carloading companies are opposed to the new class rates proposed by the western carriers. The forwarders claim they must observe the rail L.C.L. rates as a ceiling by necesity. Reductions in the rail L.C.L. class rates means the carloading companies would also be required to reduce their L.C.L. rates if they are to compete with the railroads in handling this traffic. A large portion of the carloading companies traffic moves on all-commodity rates. Very few of these rates would be affected as the governing tariffs carry a rule permitting the alternative use of class or commodity rates.

Based on a traffic study made by one carloading company for the last two weeks in June of 1954, it was estimated that it would lose about 11.5 cents in revenue for every 100 pounds of freight it transported in transcontinental territory. At the same time, this company would benefit from a reduction of 7¢ per 100 pounds in certain rail carload rates in this adjustment. The difference between these two figures is 4.5¢ which the carloading company would lose on every 100 pounds of freight transported in this territory.

On October 19, 1955, the Commission issued its report and order in this proceeding. The Commission found the present level of class rates to be unlawful on the ground that they violated sections 1 and 3 of the Interstate Commerce Act. The former section deals with the reasonableness of the rates and the latter section deals with undue preference of towns, cities, states, and territories. The Commission ordered the present class rates and the Western Classification cancelled on or before June 1, 1956, and ordered the Uniform Freight Classification to apply in lieu of the Western Classification. The new class rates prescribed by the Commission are the same class rates the western carriers proposed at the opening hearing in this proceeding. The new class rates are to be temporary. They will remain in effect for a "reasonable" period of time. The Com-

mission said a scientific approach was necessary in this proceeding in prescribing a rate scale because this proceeding involved a major rate adjustment affecting the total rate structure.

From territory to territory the percentage relationship of the same classes differ in most instances. For example, class 5 in the Western Classification is actually 50% of class 100, whereas in other territories class 5 is 35% or 40% of class 100. By applying the Uniform Freight Classification in mountain-Pacific territory in lieu of the Western Classification for L.C.L. shipments 21.42% of the ratings would be increased, 24.14% would be reduced and 54.44% of the ratings would remain unchanged.

The Commission's order in this proceeding permits the carriers to maintain certain arbitraries on short and branch line hauls and also permits certain railroads to maintain truck competitive rates. This order also permits class rates to alternate with commodity and exception rates. If the class rates are lower than the commodity or exception rates the lower class rates will apply.

#### Taxation

(Continued from page 56)

period should be downward, this would result in even greater savings.

Consideration must also be given to the possibility that it may not be possible to carry out a long-range replacement program of this kind. The result will be affected to the extent that year to year investments in new equipment fluctuate. However, the principle illustrated by the above discussion offers fascinating possibilities, even after making allowance for variables.

There is always the chance that this or another Congress may decide in its wisdom to take back the privilege of accelerated depreciation given to taxpayers by the 1954 Code. Even if that should happen, however, it is difficult to see how taxpayers who have taken advantage of one of the methods of accelerated depreciation will suffer, since it is hardly conceivable, at least in the mind of the writer, that any repeal of the 1954 Code depreciation provisions would be made retroactive, so that such taxpayers would at least be better off to the extent that they had taken depreciation in previous years in excess of the depreciation allowable under the straightline method.

### **BUSINESS PATTERN**

A comprehensive summary of the ups and downs of industrial activity in Connecticut for the thirty day period ending on the 15th day of the second previous month.

N December the index of general business activity remained unchanged at an estimated 18 per cent above normal in Connecticut. Business was high throughout 1955 excepting for a temporary decline due to the floods and averaged 16% above normal for the year.

The United States index of indus-

trial activity leveled off at an estimated 16% above normal in December. Steady expansion was the keynote of the Nation's economy in 1955 and the index averaged 12 per cent above normal for the year.

#### **Industrial Production**

The output of factories and mines in the United States, as measured by the Federal Reserve Board, continues at a record rate. The index of industrial production (1947-49 = 100) remained unchanged in December at 144 after four consecutive monthly increases. Mining activity improved while the durable goods industries declined moderately.

A leveling off in retail sales during the past few months has resulted in increasing proportions of the gain in output going into manufacturers' inventories. The ratio of inventories to sales, however, remains favorable.

Further rises in output will probably be spotty because some industries are approaching capacity and others are facing a shortage of labor and materials. On the other hand in the case of automobiles a cut-back in output has occurred.

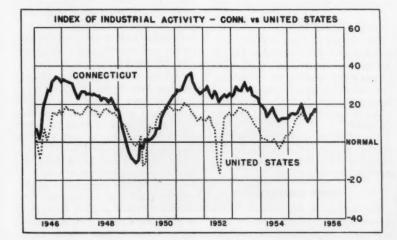
#### Construction

Construction in Connecticut, as measured by the square feet of floor space contracted for, remained at a very high level in 1955 although the monthly average of new awards declined 4% from the record 1954 rate.

Non-residential construction im-proved while residential declined due partially to the tightening of credit

#### **Hours and Earnings**

Weekly earnings of production workers in Connecticut factories reached a new high in December at \$83.42. The current standing is well above the Nation's average of \$79.90 and represents an increase of more than \$8 over this State's year ago fig-



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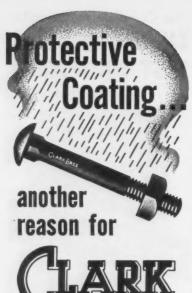
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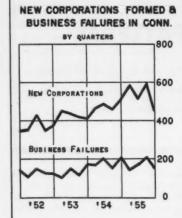
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#### **Average Hours and Earnings**

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Production workers in Hartford received higher pay than those in any of the other major labor market areas in the State in December. Their average earnings were \$88.31, followed closely by Waterbury, Stamford and Bridgeport. New Haven was considerably lower at \$77.70. Employees in Waterbury worked longest hours while those in Stamford received top hourly pay.

#### **Prices**

The Bureau of Labor Statistics' consumer price index declined in December to 114.7 from 115.0. Food, transportation and housing led the decline. The index has shown remarkable stability over the past year fluctuating within a range of less than 1 percentage point.

The wholesale price index rose fractionally in December to 111.3. This compares with 109.5 for the corresponding month of 1954.

#### Farm Income

The decline in farm income is of current concern as evident by the drop in the food component of the consumer

price index. From the last quarter of 1951 to the present, farm income has fallen from an annual rate of \$17 billion to \$10.6 billion, a 38 percent decrease.

The decline stems mainly from over production with a resultant lowering of prices. On the other hand operating costs are going up. Farmers are also receiving a smaller share of each consumer dollar spent for farm products.

#### Selling America Short

(Continued from page 21)

"high profit rates", "high charity norms", etc. None of these alone can ever be adequate for freedom, for progress, or for peace.

The main maleconomic symptoms now being felt in the Free World are: Inflation; continuation of war-time taxes into peace-time; maldistribution of production opportunities and disproportionate compensation for educated skills, for small businesses, for agriculture, for poorer nations, for partially employed. It is also to be recognized that there is lack of opportunity for the citizenry to reduce in an orderly manner their production desires so as to provide added time for leisure, education and cultural pursuits; that is, in accordance with what seems to be possible because of the great national production potential, as evidenced by a generation of surpluses which are difficult to clear through the market. These maleconomic items and others can be handled, but only by capitalistic view because capitalism is alone responsible for the progress we have. The enterprising spirit within every individual is capable of showing great multiple effects for that collectivity which aims to encourage its generation and use—only the capitalistic view can see this.

Civilization had made considerable progress over barbarism around two thousand years ago, and false conservatism and radicalism at that time found many ways to avoid the problem which had been brought about by the progress then accomplished. Again, in our day, the sanctity of the individual is being sacrificed to avoid examination of our civilization's institutions at their stage of progress. This was not the spirit given to America by its Founding Fathers. This is the spirit that is selling America short.

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Aircraft Fasteners  Scovill Manufacturing Company (PANELOC Aircraft Fasteners) Waterbury Eis Manufacturing Co (Hydraulic and Me-	Blacking Salts for Metals
Aircraft Instruments Corn Electric Company Inc Stamford Inc (Brake Lining, Lined Brake Shoes,	litchell-Bradford Chemical Co Bridger
Alrcraft—Repair & Overhaul Airport Department Pratt & Whitney Aircraft Laneous Rubber)  Alrcraft—Repair & Overhaul Airport Department Pratt & Whitney Aircraft Laneous Rubber)  Bridgeport	Black Oxide Finishing lack Oxide Inc New Brit Black Oxide Treatment
Aircraft Sheet Metal Work Age Form Co.  New Heren Scovill Manufacturing Company (Canned Oil	Sennett Metal Treating Co The 1045 New Britain Ave Elmw
Dispensers) Waterbury 91	Blades Capewell Manufacturing Company Metal S Division (hack saw and band saw) Hartí
Alreraft Test Equipment United Manufacturing Co Division of The W.I. Marson Correlation W.I. Marson Correlation Handen	Blocks Howard Company (cupola fire clay) New Ha
Alumilite Aluminum Sheets Leed Co The H A Hamden Watertown Mfg Co The Watertown S	

#### I T ' MAD E N 0 N NECTIC ١

Charles Parker Co The (m Brass & Bronze Ingot Metal
Mitchell Smelting & Refining Co Inc
Plume & Atwood Mig Co The
Whipple and Choate Company The
Bridgeport **Blower Systems** Colonial Blower Company Plainville The (medicine) Meriden Middletown Cab'net Work Hartford Builders Finish Co Blueprints and Photostats Joseph Merritt & Co Hartford Brass. Bronze, Aluminum Castings
Charles Parker Company The
Victors Brass Foundry Inc

Guilford Cable-Asbestos Insulated Bollers Bigelow Co The
General Electric Company (Residential oil and
gas fired steam and hot water) Bridgeport Rockbestos Products Corp New Haven Brass Goods Cable-Interlocked Armor American Brass Company The Waterbury Plume & Atwood Mfg Co The (to order) Waterbury General Electric Company Bridgeport Bolts and Nuts
Blake & Johnson Co The (nuts machine screw Cable—Nonmetall:c Sheathed
General Electric Company Bridgeport bolts, stove)
Clark Brothers Bolt Co Waterville Milldale Rostand Mfg Co The (Ecclesiastical Wares) Wares)

Waves)

Wares)

Company (to order)

Waterbury 91

Waterbury 91 Cable—Service Entrance
Bridgeport Bonderizing Clairglow Mfg Company General Electric Company Western Brass Mills Div Olin Mathieson Chemical Corp New Haven Portland Cages
Andrew B Hendryx Co The (bird and animal) Box Board
Federal Paper Board Co Inc
Montville, New Haven & Versailles
Lydall & Foulds Paper Co The
Robertson Paper Box Co
Montville
Montville Box Board Brass Mill Products
American Brass Company The
Bridgeport Brass Copper Co
Plume & Atwood Mfg Co The
Scovill Manufacturing Company
Western Brass Mills Div Olin Mathieson Chemical Corp New Haven American Cam Company Inc Lartford Special Machinery Co The Rowbottom Machine Company Inc Waterbury Robertson Paper Box Co Gair Company Inc Robert New Haven Board and Carton Co The New Haven Boxes Canvas Products Clairglow Mfg Company (metal) Portland
Connecticut Container Corporation New Haven
Gair Company Inc Robert (corrugated and
solid fibre shipping containers) Portland
Merriam Mfg Co (steel cash, bond,
fitted tool and tackle boxes)
Warner Bros Co The (Acetate, Paper, Acetate
and Paper Combinations, Counter Display,
Setup) F B Skiff Inc Hartford Brick-Building Donnelly Brick Co The Capacitors
Electro Motive Mfg Co Inc The (mica & trim-Willimantic New Britain Carbide Drawing Dies
State Products Co (eyelet special shape dies)
Oakville Howard Company Mullite Refractories Co The New Haven Shelton Bright Wire Goods
Sargent & Company (Screw Eyes, Screw Hooks,
Cup Hooks, Hooks and Eyes, C H Hooks)
New Haven Setup)

Boxes and Crates
City Lumber Co of Bridgeport Inc The
Bridgeport Carbide Shape Dies
Thomaston Tool & Die Co (any form)
Thomaston Boxes-Metal

Merriam Mfg Co (Bond and Security, Cash and
Utility, Personal Files and Drawer Safes)

Durham

Ourham

Ou Broaching Hartford Special Machinery Co The Precision Tool & Die Co Hartford Bronze & Aluminum Castings Charles Parker Co Knapp Foundry Company Inc (rough or ma-chined) Standard Card Clothing Co The (for textile mills)

Card Clothing Co The (for textile Stafford Springs Scovill Manufacturing Company (aluminum, brass, bronze, copper-cosmetic, drug, hair pin, oin ment, pill, powder, rouge, vanity) Waterbury brass, brass, pin, oin ment, pill, pour pin, oin ment, pill, Carpenter's Tools Brooms-Brushes
Fuller Brush Co The Sargent & Company (Planes, Squares, Plumb Bobs, Bench Screws, Clamps and Saw Vices) New Haven Hartford B Schwanda & Sons
G E Prentice Mfg Co The
Hawie Mfg Co The
North & Judd Manufacturing Co
Patent Button Co The
Risdon Manufacturing Co John
United States Rubber Company

Butkles
Kensington
Bridgeport
New Britain
Waterbury
Naugatuck
Naugatuck
Waterbury
Waterbury Buckles Carpet
B F Goodrich Sponge Products Division Shelton Gair Company Inc Robert Montville
H J Mills Inc
National Folding Box Co Inc (paper folding)
New Haven and Versailles
New Haven Board and Carton Co The Carpet Cushion
B F Goodrich Sponge Products Division Shelton Carpets and Rugs Bigelow-Sanford Carpet Co Thompsonville New Haven Robertson Paper Box Co Warner Bros Co The Montville Buffing & Polishing Compositions Apothecaries Hall Co Wate Lea Mfg Co Wate Casters Bridgeport Bassick Company The (Industrial and General) Waterbury Waterbury Boxes-Paper-Setup Bridgeport Lea Mig Co

Burners

Plume & Atwood Mig Co The (kerosene oil
Thomaston Boxes-Paper—
Box Shop Inc The
Bridgeport Paper Box Co.
Heminway Corporation The
H J Mills Inc
Strouse Adler Company The
Warner Bros Co The Casters—Industrial Windsor Locks New Haven Bridgeport Waterbury Bristol New Haven George P Clark Co Castings
Connecticut Foundry Co (grey iron)
Connecticut Malleable Castings Co (malleable iron castings)
Consolidated Industries Inc West Cheshire Charles Parker Company The (brass, bronze, aluminum)
Charles Parker Company The (brass, bronze, aluminum)
Charles Parker Company The (brass, bronze, aluminum)
Charles Parker Company The (malleable iron, metal and alloy)
Naugatuck
Farrel-Birmingham Company Inc (Mechanite, Nodular, Iron, Steel)
Hartford Electric Steel Corp The (stainless steel)
Casting Company (gray, alloy and Burners-Automatic -Automatic Stamford Bridgeport Braid-Elastic & Non-elastic Burners—Coal and Oil
Peabody Engineering Corporation (Combined) Essex **Brake Cables** Eis Manufacturing Co Middletown Burners—Gas Peabody Engineering Corporation (Blast Fur-**Brake Linings** Burners—Gas and Oli Peabody Engineering Corporation (Combined) Stamford Raybestos Division of Raybestos-Manhattan Inc (Automotive and Industrial) Bridgeport Russell Mfg Co The Middletown Brake Service Parts
Eis Manufacturing Co Burners—Refinery
Peabody Engineering Corporation (For Gas and Middletown steel)
Plainville Casting Company (gray, alloy and Plainville Casting Company (gray, and high tensile irons)
Malleable Iron Fittings Co (malleable iron and steel)
McLagon Foundry Co (grey iron) New Haven
Newton-New Haven Co (zinc and aluminum)
688 Third Ave West Haven
Philbrick-Booth & Spencer Inc (grey iron)
Hartford Burnishing
Abbott Ball Co The (Burnishing Barrells
Burnishing Media) Hartford Pratt & Whitney Co Inc tubing)
Bristol Brass Corp The (sheet, wire, rods) West Hartford Chase Brass & Copper Co Waterbury
Miller Company The (phosphor bronze and brass
in sheets, strips, rolls) Meriden
Plume & Atwood Mfg Co The (sheet, wire,
rod) Thomaston
Scovill Manufacturing Company Waterbury 91
Seymour Mfg Co The (strip, sheet & wire) Bristol Producto Machine Company The Scovill Manufacturing Company Bronze)

Turner & Seymour Mfg Co The (gray iron, semi steel and alloy)

Union Mfg Co (grey iron & semi steel)

Waterbury Foundry Company The (highway & sash weights)

Waterbury Foundry Company The (highway & waterbury Wilcox Crittenden & Co Inc (gray iron and brass) Busways
Distribution Assemblies Department, General
Electric Co Plainville Buttons B Schwanda & Sons Staffordville
Frank Parizek Manufacturing Co The Putnam
Patent Button Co The
Scovill Manufacturing Company (Uniform and
Tack Fasteners) Waterbury 91
Waterbury Companies Inc (Uniform and Fancy
Waterbury Staffordville Tinsheet Metals Co The (sheets and rolls)

Western Brass Mills Division of Olin Industries Inc (sheet, strip) New Haven

Castings—Investment Arwood Precision Casting Corp Groton	Coll Winding Machines Boesch Mfg Co Inc Danbury	Copper Castings Knapp Foundry Company Inc Guilford
Mullite Refractory Co The Shelton	Colls Dano Electric Company Winsted	Copper Sheets American Brass Company The Waterbury
Chain Risdon Manufacturing Co John M Russel Div Naugatuck	Colls-Electric Bittermann Electric Company Canaan	Copper Shingles
Turner and Seymour Mfg Co The (weldless, sash, jack, safety, furnace, universal, lion and cable)  Torrington	Colls-Pipe or Tube National Pipe Bending Co The 160 River St New Haven	New Haven Copper Co The Seymour  Copperware  Bridgeport Brass Company (cooking utensils)
Chain—Bead Auto-Swage Products Inc Shelton Bead Chain Mfg Co The Bridgeport	Whitlock Manufacturing Co The Hartford  Cold Molded Electrical Insulation	Copper Water Tube
Chain—Power Transmission and Conveying Whitney Chain Company Hartford	Meriden Molded Plastics Meriden  Commercial Heat Treating	American Brass Company The Waterbury Bridgeport Brass Co Bridgeport Cords—Asbestos Insulated
Chairs The Hitchcock Chair Company Riverton	A F Holden Company The 52 Richard St West Haven Commercial Truck Bodies	General Electric Company Bridgeport  Cords—Braided
Chemical Manufacturing Carwin Company The North Haven Chemicals	Metropolitan Body Company Bridgeport  Compacts	General Electric Company Bridgeport  Cords—Heater
American Cyanamid Company Apothecaries Hall Co Carwin Company The  Waterbury Waterbury North Haven	Scovill Manufacturing Company (powder and waterbury	Essex Mills Inc Essex General Electric Company Bridgeport  Cords—Portable
Macalaster Bicknell Company MacDermid Incorporated Naugatuck Chemical Division  New Haven Waterbury United States	Pratt & Whitney Co Inc (Electro-limit and Air- O-Limit) West Hartford	General Electric Company Bridgeport  Cord Sets-Electric
Rubber Co New England Lime Company Pfizer & Co Inc Chas  Rubber Co Canaan Groton	Complete Plating Dept. Installations Foy Electro-Chemical Co Ansonia	General Electric Company Bridgeport Seeger-Williams Inc Bridgeport
Chemicals—Agriculture Naugatuck Chemical Division United States	Norwalk Company Inc (high pressure air and gas) South Norwalk	Sonoco Products Co (Climax-Lowell Div) Mystic
Rubber Co (insecticides, fungicides, weed killers) Naugatuck Christmas Light Clips	Newton Co The (electronic) Reflectone Corporation The  Manchester Stamford	Connecticut Container Corporation New Haven Corrugated Containers Inc Hartford
Foursome Manufacturing Co Bristol  Chromium Plating	Plastricrete Corp Hamden	Corrugated Shipping Cases Connecticut Container Corporation New Haven
Chromium Corp of America Chromium Process Company The City Plating Works Inc  Waterbury Shelton Bridgeport	Condenser and Heat Exchanger Tubes Bridgeport Brass Company Bridgeport Scovill Manufacturing Company Waterbury	Connecticut Corrugated Box Div Robert Gair Co Inc Portland D L & D Container Corp 87 Shelton Ave
Cushman Chuck Co The Hartford Horton Chuck Div The E Horton & Son Com-	Sonoco Products Co (Climax-Lowell Div) (Paper) Mystic	Cosmetic Containers Eyelet Specialty Co The Waterbury
Jacobs Manufacturing Co The Union Manufacturing Company Windsor Locks West Hartford New Britain	McNeal J D (Electrical and Electronic) New Haven	Plume & Atwood Mfg Co The (metal) Thomaston Scovill Manufacturing Company Waterbury
Jacobs Manufacturing Co The West Hartford	Stanley P Rockwell Co Inc The (Consulting) 296 Homestead Ave Hartford	J B Williams Co The Glastonbury
Chucks & Face Plate Jaws Cushman Chuck Co The Hartford Union Mfg Co New Britain	Pratt & Whitney Co Inc West Hartford  Contract Machining	Cotton and Asbestos Wicking Bland Burner Co The Hartford
Horton Chuck Div The E Horton & Son Com- pany Windsor Locks	Laurel Mfg Co Inc (Precision Production Small Parts) Plainville Malleable Iron Fittings Company Branford	Floyd Cranska Co The Moosup  Counting Devices
Cushman Chuck Co The Hartford Union Manufacturing Company New Britain	Charles Parker Co Meriden Contract Manufacturers	Veeder-Root Inc Hartford
Trumbull Components Department, General Electric Co	Fenn Mig Co The (Precision Machine Work) Newington Greist Mig Co The (metal parts and assemblies)	Scovill Manufacturing Company (hose and tube) Waterbury
Corley Co Inc The Plainville	503 Blake St New Haven Merriam Mfg Co (production runs—metal boxes and containers to specifications) Durham Charles Parker Co (sheet metal fabricators)	Sperry Products Inc Danbury  Cranes and Conveyors
Howard Company (Fire Howard "B" and High Temperature Dry) New Haven	Plume & Atwood Mfg Co The (metal parts and assemblies)	J-B Engineering Sales Co New Haven  Crushers
Cleaning Compounds Enthone Inc (Industrial) New Haven Foy Electro-Chemical Co (industrial) Ansonia	Scovill Manufacturing Company (metal parts and assemblies) Waterbury 91 J H Sessions & Son Bristol	Farrel-Birmingham Company Inc (Stone and Ore) Ansonia
Cleansing Compounds MacDermid Incorporated Waterbury	Bristol Company The Waterbury	Cups—Paper Continental Can Co Paper Container Div Kensington
Clock Mechanisms Lux Clock Mfg Co The Waterbury	Manning Maxwell & Moore Inc Stratford  Controls—Remote  Panish Controls (Remote Controls for Marine	B F Goodrich Sponge Products Division Shelton
E Ingraham Co The Bristol Seth Thomas Clocks Thomaston	& Aeronautic Applications) Bridgeport  Converters DC to AC	Gilman Brothers Co The Gilman  Cut Stone  Dextone Co The  New Haven
United States Time Corporation The Waterbury  Clocks—Alarm  Lux Clock Mfg Co The Waterbury	Electric Specialty Co Stamford  Conveyor Systems	Cutters Barnes Tool Company The (pipe cutters, hand)
Clocks—Automatic Cooking Lux Clock Mfg Co The Waterbury	Leeds Conveyor Mfg Co The East Haven Production Equipment Co Meriden	Mitrametric Co The (ground pinion)  Torrington
Snow-Nabstedt Gear Corp The New Haven	American Brass Corp The (sheet, wire, rods, tubes)  Waterbury	Pratt & Whitney Co Inc (Milling Cutters all types) West Hartford
Clutch Facings Raybestos Division of Raybestos-Manhattan Inc (Molded, Woven, Semi-metallic and Full-	Bridgeport Brass Company (sheet, rod, wire and tubing) Brisso Brass Corp The (steel)  Chase Brass Company Co (sheet rod wire the)	Bartholomew Co H I Bristo  Cyl. Gauges & Tools
metallic) Russell Mfg Co The  Coatings  Bridgeport Middletown	Chase Brass & Copper Co (sheet, rod, wire tube) Waterbury Thinsheet Metals Co The (sheets and rolls) Waterbury	J & S Machine Co Inc Hartford  Deep Hole Drilling & Reaming
Bischoff Chemical Corporation (Peelable Plastic Coatings) Ivoryton	Western Brass Mills Div Olin Mathieson Chemical Corp New Haven	Hamden Deep Hole Drilling Co Wilson Arms Co The Hartford (Advt.)

Deep Drawings Stanley Pressed Metal New Britain	Joseph Merritt & Co Hartford	Electric Timing Motors Sessions Clock Co The (small) Forestville
Delayed Action Mechanism M. H. Rhodes Inc. Hartford R. W. Cramer Company Inc. The Centerbrook	Corley Co Inc The Plainville	General Electric Company Bridgeport Electric Wire
Demineralizers Crystal Research Laboratories Hartford	Townsend Mfg Co The H P Elmwood  Drilling Machines	General Electric Company Rockbestos Products Corp (asbestos insulated) New Haven
oy Electro-Chemical Co (industrial) Ansonia  Development Work	Howe & Faut Inc (Turret Type)  East Norwalk  Pratt & Whitney Co Inc (Deep Hole)	Arrow-Hart & Hegeman Electric Co The Hartford
aybrook Manufacturing Inc Old Saybrook  Diamonds—Industrial	West Hartford  Drilling and Tapping Machinery  Hartford Special Machinery Co The Hartford	Electric Woven Heating Elements Pre-Fab Heating Co Inc Guilford Electrical Conduit Fittings & Grounding
hiamond Tool and Die Works Hartford	Drop Forgings	Specialties Gillette-Vibber Company The New London
Dictating Machines ictaphone Corporation ray Manufacturing Company The undScriber Corporation The New Haven	Atwater Mfg Co Billings & Spencer Co The Consolidated Industries  Plantsville Hartford West Cheshire	Electrical Connectors Burndy Engineering Co Inc Norwalk
Die Cast Dies & F Tool & Die Corp Bridgeport	Wilcox Crittenden & Co Inc Middletown  Druggists' Rubber Sundries Seamless Rubber Company The New Haven	Electrical Control Apparatus Plainville Electrical Products Co The Plainville
Die Castings It Vernon Die Casting Co Stamford	Duplicating Machines—Automatic Pratt & Whitney Co Inc West Hartford	A C Gilbert Co New Haven
ewton-New Haven Co Inc New Haven  Die Casting Dies	Regent Machine Co Bridgeport	Electrical Motors Electric Specialty Co U S Electrical Motors Inc  Stamford Milford
BA Tool & Die Co astern Machine Screw Corp The Truman & Barclay Sts arker Stamp Works Co The Manchester New Haven Hartford	Essex Mills Inc Essex	Bristol Co The Waterbury
Veimann Bros Mfg Co The Derby  Die Heads—Self Opening	General Electric Company (for residential, commercial and industrial applications)	Electrical Relays and Controls Allied Control Co Plantsville Electrical Switchboards
Castern Machine Screw Corp The New Haven decometric Tool Division, Greenfield Tap & Die Corp New Haven	Rockbestos Products Corp (asbestos insulated) New Haven	Plainville Electrical Products Co The Plainville
Die Polishing Machinery fartford Special Machinery Co The Hartford	Sessions Clock Co The (alarm, kitchen, occasional and office)  Forestville	McNeal J D New Haven  Electrical Wiring Systems
Die Sets ratt & Whitney Co Inc (Precision)	Electric—Commutators & Segments Cameron Elec Mfg Co The (rewinding motors)	Wiremold Co The Hartford
roducto Machine Company The Bridgeport nion Mfg Co (precision, steel and semi-steel) New Britain	Ansonia  Electric Cord Springs  Bristol Spring Manufacturing Co Plainville	Electronic Parts Terrville Manufacturing Co (Stampings to customer specifications Terryville
ratt & Whitney Co Inc West Hartford	Electric Cords General Electric Company Bridgeport Rockbestos Products Corp (asbestos insulated)	Gray Manufacturing Company The Hartford McNeal J D Newton Co The Manchester
loggson & Pettis Mfg Co The 141 Brewery St New Haven	Ripley Company Inc New Haven Middletown	Ripley Co Sturrup Larabee & Warmers Inc Middletown Middletown
itrametric Co The (ground for gears) Torrington	Electric Fixture Wire	City Plating Works Inc National Sherardizing & Machine Co Hartford
arker Stamp Works Inc The (plastics and die castings) Hartford ratt & Whitney Co Inc (Monocone and Ducone Dies) West Hartford	General Electric Company Rockbestos Products Corp (asbestos insulated) New Haven	Waterbury Plating Company Waterbury  Electroplating—Equipment & Supplies Comco Inc Div of Enthone Inc New Haven
recision Engineering Co Inc (forging, trimming & blanking) Southington	Electric Hand Irons Winsted Hardware Mfg Co (trade mark "Durabilt") Winsted	Lea Manufacturing Co The Waterbury MacDermid Incorporated Waterbury  Electroplating & Industrial
Dies & Die Cutting ouglas Co Geo M  New Haven  Dies and Die Sinking	Hartford Element Co Hartford	Foy Electro Chemical Co Ansonia
onsolidated Industries West Cheshire  D'sh Drying Machines	General Electric Company Bridgeport	Enthone Inc United Chromium Incorporated  Electroplating Processes & Supplies New Haver Waterbury
olt's Manufacturing Company Hartford  Dish Washing Machines	Case Brothers Inc Stevens Paper Mills Inc The  Manchester Windsor	Electrotypes Barnum-Hayward Electrotype Co Inc New Haver
Olt's Manufacturing Company Hartford  Display Containers	Electric Lighting Fixtures Fan-Craft Mfg Co (residential, church, post	Lockwood Sons Inc Wm H New Haven Electrotype Div Electrographic Corp New Haven
ational Folding Box Co Inc (folding paper- board) New Haven and Versailles  Displays—Metal	lanterns) Plainville Plume & Atwood Mfg Co The Wasley Products Inc Plainville	Elevators Eastern Machinery Co The (passenger and freight) New Haves
Ourham Mfg Co The (Designing & Mfg to cus- tomers' specifications) Durham Merriam Mfg Co (Contract Work to Individual	Electric Motor Controls Arrow-Hart & Hegeman Electric Co The Hartford	General Elevator Service Co Hartford  Enameling Conn Metal Finishing Co Hamder
Specifications)  arsons Co Inc W A (custom designed)  Durham	Electrical Outlet and Switch Boxes, and	Waterbury Plating Company Waterbury
Distribution Centers Distribution Assemblies Department, General Electric Co Plainville	General Electric Company Bridgeport  Electric Signs	Enameling and Finishing Clairglow Mfg Co Portlan End Milling Cutters
Door Closers argent & Company New Haven	Berger Sign Co United Advertising Corp Hartford New Haven	Pratt & Whitney Co Inc West Hartford Engines Pratt & Whitney Aircraft Div United Aircraft
Vale & Towne Mfg Co The Stamford  Doors  Dilea Co The (metal seridential and commercial)	Arrow-Hart & Hegeman Electric Co The Hartford	Corp (aircraft) Wolverine Motor Works Inc (diesel stationary marine)  East Hartford Bridgepor
Bilco Co The (metal, residential and commercial) West Haven	R W Cramer Company Inc The Centerbrook	Curtis 1000 Inc Hartfor
Dowel Pins Allen Manufacturing Co The Holo-Krome Screw Corp The West Hartford	Sessions Clock Co The Forestville	United States Envelope Company Hartford Division Hartfor (Advt.

Envelopes—Stock and Special Continental Can Co Paper Container Div Kensington Glass Cutters
Fletcher-Terry Co The Flat Springs
Bristol Spring Manufacturing Co
Gemco Manufacturing Co Inc Plainville Forestville Tavano Mfg Co Southington Extractors—Tap
West Hartford Flexible Shaft Machines
Pratt & Whitney Co Inc We Torrington Walton Company The West Hartford Gold & Silver Plating Donham Craft Inc (on metals & Evelets Floor & Ce'ling Plates Beaton & Cadwell Mfg Co The American Brass Company The
Platt Bros & Co The P O Box 1030 Waterbury
Plume & Atwood Mfg Co The
Scovill Manufacturing Company
Waterbury 91 New Britain Chomaston Golf Equipment
Horton Mfg Co The (clubs, shafts, balls, bags) Fluorescent Lighting Equipment
Fullerton Manufacturing Corp Norwalk
Vanderman Manufacturing Co The
Willimantic
Wiremold Company The
Hartford Waterbury 91 Waterbury Stevens Co Inc A D Steinbach & Sons Inc Eyelets. Ferrules and Wiring Terminals New Haven A D Steinbach & Sons The

Grinding

Farrel-Birmingham Company Inc (Roll and Ansonia Hartford Special Machinery Co The (gears, threads, cams and splines)

Horberg Grinding Industries Inc (Precision custom grinding; centerless, cylindrical, surfaces, internal and special)

19 Staples St Bridgeport American Brass Company The Waterbury Foam Rubber
B F Goodrich Sponge Products Division Shelton Eyelet Machine Products
American Brass Company The
Ball & Socket Mfg Co The
Cold Forming Mfg Co The
Plume & Atwood Mfg Co The
Stevens Co Inc B F Goodrich Sponge Frounds

Forgings

Billings & Spencer Company
Capewell Manufacturing Company
Cark Brothers Bolt Co
Clark Brothers Bolt Co
Con-olidated Industries Inc
Heppenstall Co (all kinds and shapes)

Bridgeport

Was ferrous) Waterbury West Cheshire Waterbury Thomaston Fabricators Scovill Manufacturing Company (aluminum, brass, bronze, copper, steel) Waterbury Orinding Heads—Internal
Pratt & Whitney Co Inc (Pneumatic, High
Speed) West Hartford Fancy Dress Buttons and Buckles rbury Companies Inc Water Scovill Manufacturing Company (Non-ferro Waterbury Waterbury Waterbury Foundries
Connecticut Malleable Castings Co (malleable iron castings)
Ductile Iron Foundry Inc Stratford
Farrel-Birmingham Company Inc (Iron and Steel) Fans-Electric
General Electric Company Grinding Machines
Farrel-Birmingham Company Inc (Roll) Bridgeport Pratt & Whitney Co Inc (Surface, Die, Gear and Cutter Grinders) West Hartford Rowbottom Machine Company Inc (cam) Waterbury Fasteners—Aircraft
Scovill Manufacturing Company
Aircraft Fasteners) (PANELOC Wa'erbury Steel) Fritzell Foundry & Casting Co The
New Haven
Harford Electric Steel Corp The
Charles Parker Company The (brass, pronze, Meriden Fasteners—Laundry Proof
Scovill Manufacturing Company (GRIPPER Waterbury Grommets
American Brass Company The
Plume & Atwood Mfg Co The Waterbury Waterbury snap fasteners—Silde & Snap

G E Prentice Mfg Co The Kensington
Scovill Manufacturing Company (GRIPPER
zippers and GRIPPER snap fasteners)
Waterbury Charles Parker Company
aluminum)
Plainville Casting Company (gray, alloy and high tensile irons)
Producto Machine Company The
Turner & Seymour Mfg Co The (gray, iron, semi steel and alloy)
Union Mfg Co (gray iron & semi steel)
Co Ins (iron, brass, alumi-Ground Rubber Rolls
Saybrook Manufacturing Inc Old Saybrook Guards for Machinery
Wheeler Co The G E New Haven Auburn Manufacturing Company The (mechanical cut parts) Middletown Capewell Manufacturing Co The Hartford uburn Manusacca, cal, cut parts)

rycor Felt Company (paper makers and in-Staffordville Wilcox Crittenden & Co Inc (iron, brass, alumi-num and bronze) Middletown dustrial)

Felt—All Purpose

American Felt Co (Mill & Cutting Plant)

Glenville

Chas W House & Sons Inc (Mills & Cutting Unionville Hammers—Carpenters and Machinests Capewell Manufacturing Company Hart Fountain Pens and Mechanical Pencils Waterman Pen Company Inc Seym Hand Tools Foundry Riddles
John P Smith Co The 423-33 Chanel St
New Haven Billings and Spencer Company (wrenches, sockets and shop tools)

Hartford Bridgeport Hdwe Mfg Corp The (nail pullers, scout axes, box opening tools, trovels, coping Fenders-Boat B F Goodrich Sponge Products Division Shelton saws, putty knives) Fuel O'l Pump and Heater Sets Peabody Engineering Corporation S Bridgeport Fiber-glass Fabrication Davis Co The E J Hardness Testers
Wilson Mechanical Instrument Div American,
Chain & Cable Company Inc Bridgeport New Haven Furnaces Fibre Board Norwalk Airconditioning Corp The (warm air oil fired) Case Brothers Inc C H Norton Co The Stevens Paper Mills Inc The Manchester North Westchester e Windsor Hardware
Bassick Company The (Automotive) Bridgeport
Harlock Products Corp New Haven
Sargent & Company New Haven
Wilcox Crittenden & Co Inc (marine heavy
and industrial)
Yale & Towne Mfg Co The Stamford Gage Blocks
Pratt & Whitney Co Inc (Alloy steel and Carbide, Hoke and USA) West Hartford Standard Card Clothing Co The
Stafford Springs Galvanizing Films Malleable Iron Fittings Co Wilcox Crittenden & Co Inc Branford Middletown Cine-Video Productions Inc Hardware-Marine & Bus Rostand Mfg Co The Finger Nail Clippers
o The 32 Beaver St Ansonia Milford Guskets
Auburn Manufacturing Company The (from all Middletown H C Cook Co and Firearms
Colt's Manufacturing Company
Junior Screw Machine Products Inc
West Haven
New Haven
New Haven
Reidgeport H C Cook Co The Hardware—Trailer Cabinet
Excelsior Hardware Co The Stamford Hardware, Trunk & Luggage
Corbin Cabinet Lock Div American Hardware
Britain
Bristol materials) Middletown Raybestos Division of Raybestos-Manhattan Inc Bridgeport Marlin Firearms Co The
O F Mosberg & Sons Inc
Remington Arms Company Inc
Arms and Ammunition Div Olin
Chemical Corp Tsingris Die Cutting Corp (from all mate-rials) Waterbury Corp J H Sessions & Son Yale & Towne Mfg Co The Stamford Bridgeport Mathieson Gas Range Conversion Burner Holyoke Heater Corp of Conn Inc Hartford Doran Bros Inc Hat Machinery New Haven Gas Scrubbers, Coolers and Absorbers Peabody Engineering Corporation Stam Fire Hose Fabrics Fire Hose (municipal and industrial)
Sandy Hook Health Surgical & Orthopedic Supports
Berger Brothers Company The (custom may
for back, breast, and abdomen) New Hav Sandy Hook
Preplace Goods
American Windshield & Specialty Co The
881 Boston Post Road
John P Smith Co The (screens) 423-33 Chapel
St (custom made New Haven Gauges Bristol Co The (pressure and vacuum-recording Heat Elements
Electroflex Heat Inc
Safeway Heat Elements Inc (woven wire resistance type)
Middletown automatic control) Waterbury
Helicoid Gage Division American Chain & Cable
Co The (pressure and vacuum) Manning Maxwell & Moore Inc
Pratt & Whitney Co Inc (Precision Measurement all types)

West Hartford Pireproof Floor Jo.sts
Dextone Co The Heat Exchangers New Haven Whitlock Manufacturing Co Hartford Fireworks Heat Treating
A F Holden Co The 52 Richard St
Bennett Metal Treating Co The
1045 New Britain Ave Elmwood
Commercial Metal Treating Co Bridgeport
New Britain-Gridley Machine Division
The New Britain Machine Co New Britain
Skene Co Inc The William A (metals)

Rridgeport M Backes' Sons Inc Wallingford Gears
Mitrametric Co The (blanked fine pitch) Fishing Lures Dresser Products Inc Canaan Gears and Gear Cutting
Farrel-Birmingham Company Inc Ansonia
Fenn Mfg Co The
Hartford Special Machinery Co The Hartford Fishing Tackle H C Cook Co The 32 Beaver St Ansonia Flashlights
Bridgeport Metal Goods Mfg Co
Electrical Div Olin Mathieson Bridgeport mical Corp Bridgeport Chemical Corp New Haven Glass Blowing Macalaster Bicknell Company Stanley P Rockwell Co Inc The 296 Homestead Ave Hartford (Advt.) New Haven

I J M A D	E IN CON	N E C I I C O I
Heat-Treating Equipment	Insulated Wire & Cable	Lathes—Toolroom and Automat'c
Autoyre Company The Barnes Co The Wallace Div Associated Sprin	Geneal Electric Company (for residential commercial and industrial applications)	Pratt & Whitney Co Inc West Hartford
Corp A F Holden Company The 52 Richard Stree West Haven (Main Plant	Bridgeport	Lathes—Vertical Turret Bullard Company The (single spindle)
West Haven (Main Plant Bauer & Company Inc Hartfor Rolock Inc (Retorts, Muffles, etc.) Fairfiel Stanley P Rockwell Co Inc The (commercial	Insulated Wire & Cable Machinery Davis Electric Company Wallingford	Christie Plating Co The Bridgeport  Groton
Stanley P Rockwell Co Inc The (commercial 296 Homestead Ave Hartfor	Instruments	Leather
Heat Treating Fixtures Rolock Inc (Trays, Baskets, etc.) Wiretex Mfg Co Inc Fairfiel Bridgepor		Norwich Leather Co Norwich Herman Roser & Sons Inc (Genuine Pigskin) Glastonbury
Heat Treating Saits and Compounds	Pratt & Whitney Co Inc (Precision Measuring)	Leather Dog Furnishings Andrew B Hendryx Co The New Haven
A F Holden Company The 52 Richard Street West Have Mitchell-Bradford Chemical Co Bridgepor		The Smith-Worthington Saddlery Co Hartford
Heaters-Electric	Interestors	Leather Goods Trimmings G E Prentice Mfg Co The Kensington
General Electric Company Bridgepor Heating and Cooling Colls	Reflectone Corporation The Stamford	Auburn Manufacturing Company The (pack-
G & O Manufacturing Co New Have	Inter-Communications Equipment Conn Telephone & Electric Corp Subsidiary of Great American Industries Inc Meriden	ings, cubs, washers, etc) Middletown
Hartford Element Co Hartford	Interval Timers	Lehman Brothers Inc (designers, engravers, lithographers) New Haven
Heavy Chemicals Naugatuck Chemical Division United State	Lux Clock Manufacturing Company Waterbury Rhodes Inc M H Hartford	Levels-Machinist's Precision Bullard Company The Bridgeport
Rubber Co (sulphuric, nitric and muriat acids and aniline oil)	Case Brothers Inc Manchester	Light Assemblies
Hex-Socket Screws Bristol Company The Waterbur	Japanning J H Sessions & Son Bristol	Saybrook Manufacturing Inc Old Saybrook Lighting Accessories—Fluorescent
Holo-Krome Screw Corp The West Hartford	Moore Special Tool Co (Moore) Bridgeport	General Electric Company Bridgeport
High Frequency Alternators Electric Specialty Co Stamfor		Fullerton Manufacturing Corp Norwalk Miller Co The (Miller, Duplexalite, Iyanhoe)
Highway Guard Rail Hardware Malleable Iron Fittings Co Branfo	Jigs, Fixtures & Gages Federal Machine & Tool Co Bristol	Meriden Lines—Braided
Homer D Bronson Company Beacon Fal	Jig Grinder  Moore Special Tool Co (Moore) Bridgeport	Essex Mills Inc Essex
Hobs and Hobbings	Keller Machines	New England Lime Company Canaan
ABA Tool & Die Co Parker Stamp Works Inc The Pratt & Whitney Co Inc (Die and Thread Mi	Pratt & Whitney Co Inc West Hartford Key Blanks	Scovill Manufacturing Company Waterbury
ing) West Hartto	Yale & Towne Mfg Co The Stamford	Bridgeport Metal Goods Mfg Co Bridgeport Plume & Atwood Manufacturing Co
J-B Engineering Sales Co New Have Hoists and Trolleys	J & J Cash Inc (Woven) South Norwalk	Lithographers Waterbury
Union Mfg Company New Brita	n Naugatuck Chemical Division United States Rubber Co (for rubber articles) Naugatuck	O'Toole & Sons Inc T Stamford
Hose Fittings Don Mig Co J M Scovill Manufacturing Company Waterbur	k Label Moisteners	Kellogg & Bulkeley A Division of Connecticut Printers Inc
Hose-Flexible Metallic	Detter Lackages life Shellon	Lehman Brothers Inc New Haver A D Steinbach & Sons New Haver
American Brass Co American Metal Hose Branch Waterbu	Laboratory Equipment  Yew Haven  Yew Haven	Locks-Banks
Hose Supporter Trimmings Hawie Mfg Co The (So-Lo Grip Tabs)	Macalaster Bicknell Company New Haven	Yale & Towne Mfg Co The Stamford  Locks—Builders
Hospital Signal Systems	American February The Bridgerest	Eagle Lock Co The Terryville Sargent & Company New Haver
Conn Telephone & Electric Corp Subsidiary Great American Industries Inc Merid	Wilcox Lace Corporation Middletown	Yale & Towne Mfg Co The Stamford
Hydraulic Brake Fluids Eis Manufacturing Co Middleton	wilcox Lace Corporation The Middletown	Eagle Lock Co The Terryville Excelsior Hardware Co The Stamfore
Hydraulic Controls Sperry Products Inc Danbu	Lacquers & Synthetic Enamels Chemical Coatings Corporation Rocky Hill	Yale & Towne Mfg Co The Stamford
Hypodermic Needles	United Chromium Incorporated Waterbury	Locks—Special Purpose Eagle Lock Co The Terryville
Roehr Products Company Waterbu	A W Flint Co  Ladders  196 Chapel St New Haven	Yale & Towne Mfg Co The Stamford
B F Goodrich Sponge Products Division Shelt	n Laminated Metal Bridgeport Brass Company Bridgeport	Eagle Lock Co The Terryville
C G S Laboratories Inc Stamfo		Locks—Suitcase and Trimmings Excelsior Hardware Co The Stamford
Industrial Chemicals Foy Electro-Chemical Co Ansor	Waterbury	Locks—Trunk Eagle Lock Co The Terryvill
Industrial Chrome Plating Mirror Polishing & Buffing Co Waterbu	Lampholders—Incandescent and Fluorescent General Electric Company Bridgeport	Excelsior Hardware Co The Stamfor Yale & Towne Mfg Co The Stamfor
Industrial Displays	Verplex Company The Essex	Locks—Zipper Excelsior Hardware Co The Stamfor
Sansone Co S Frederick (Designers Builders and Counselors) Short Bea	Electrical Div Olin Mathieson Chemical Corp	Loom-Non-Metallic Wiremold Company The Hartfor
Industrial Finishes Chemical Coatings Corporation United Chromium Incorporated Waterbu	Lathes—Contin-U-Matic	Lumber & Millwork Products
Industrial Tools—Powder Actuated	Bullard Company, The (vertical multi-spindle- continuous turning type) Bridgeport	City Lumber Co of Bridgeport Inc Bridgepor
	rt	Collins Company The Collinsvill
Remington Arms Company Inc Bridgep	Lathes-Man-Au-Trol	1 1 1 1 1 1 1
	Bullard Company The Bridgeport	Lubricants—High Pressure Alpha Molykote Corp The Stamfore Lubricants—Extreme Temperatures

#### NEC T 5 D ı N 0 N TI T

Machines—Forming
A H Nilson Mach Co The (four-slide wire and ribbon stock)

Norwalk

Machines-Paper Ruling John McAdams & Sons Inc

Machine Design

**Machine Tools** 

Machine Tool Designers
New Britain

Bridgeport

Black Rock Mfg Company

R & S Company

Metal Finishing Hartford Industrial Finishing Co National Sheradizing & Machine Co Waterbury Plating Company

**Metal Formings** 

Hartford Hartford Waterbury

West Cheshire

New Britain

Master Engineering Company Stanley Pressed Metal Machines—Pipe & Bolt Threading
Capewell Mfg Co The Hartford Bullard Company The Pratt & Whitney Co Inc Producto Machine Company The West Hartford Bridgeport Leed Co The H A Machines—Precision Boring
w Britain-Gridley Machine Division
The New Britain Machine Co New Hamden Machine Work Black Rock Mfg Company The Farrel-Birmingham Company Inc Ansonia (precision parts)

Newington New Britain Conn Metal Finishing Co Hamden Machines-Rolling
Fenn Manufacturing Company The Newington H C Cook Co The 32 Be parts)
Hartford Special Machinery Co The (contract
Hartford 32 Beaver St Ansonia Machines—Slotting
Globe Tapping Machine Company The (High
Production Screw Head Slotting) Bridgeport
Waterbury Farrel Foundry & Machine Co The
(screw head) Waterbury work only)
National Sheradizing & Machine Co (job)
Hartford Metal Parts Washing Machines Foy Electro-Chemical Co National Sheradizing a Hartford
Parker Stamp Works Inc The (Special)
Hartford
Hartford
Hartford
Hartford
Hartford
Hartford
Hartford
Hartford Ansonia Metal Plating—Gold & S:lver
Donham Craft Inc Thomaston Swan Tool & Machine Co The Hartford
Torrington Manufacturing Co The (special rolling mill machinery) Metal Products—Stampings
American Brass Company The Waterbury
Plume & Atwood Manufacturing Co Machines-Spacing Table
Description The Bridgeport Bullard Company Machinery
Fenn Manufacturing Company The (special)
Rewington
Globe Tapping Machine Company (dial type
drilling and tapping)
Hallden Machine Company The (mill)
Torrington Manufacturing Co The
Torrington Machines—Special Fenn Mfg Co The Fuller Brush Co The J H Sessions & Son Scovill Manufacturing Company (Made-to-Or-Waterbury 91 New Britain Newington Hartford Machines—Swaging
Fenn Manufacturing Company The Newington Machines—Thread Rolling
Hartford Special Machinery Co The
Waterbury Farrel Foundry & Machine Co The
Waterbury Metal Specialties Excelsion Hardware Co The Stamford Moseley Metal Crafts Inc West Hartford Machinery—Automatic
Banthin Engineering Company (new and re-Bridgeport Machines—Turks Head
Fenn Manufacturing Company The Newington **Metal Stampings** Machinery—Bolt and Nut Waterbury Farrel Foundry & Machine Co The Waterbury Machines—Well Drilling
Consolidated Industries West Cheshire Machinery—Cold Heading Waterbury Farrel Foundry & Machine Co The Waterbury Machines-Wire Drawing Fenn Manufacturing Company The Newington Viking Wire Co Inc Danbury Machinery Dealers & Rebuilders Botwinik Brothers New New Haven Fairfield New Haven Manganese Bronze Ingot Whipple and Choate Company Bridgeport J L Lucas and Son State Machinery Co Inc Manicure Instruments Machinery-Extruding Standard Machinery Co The W E Bassett Company The Derby Mystic Marine Engines
Kilborn-Sauer Company (runns
searchlights)
Lathrop Engine Co The Machinery—Metal-Working
Fenn Míg Co The
Waterbury Farrel Foundry & Machine Co The
Waterbury (running lights and Fairfield Mystic Marine Equipment
Russell Manufacturing Company
cord and accessory hardware) Middletown
Wilcox-Crittenden Div North & Judd Mfg Co
Middletown West Hartford Pratt & Whitney Co Inc Machinery-Nut
Waterbury Farrel Foundry & Machine Co The
Waterbury
Waterbury Meters pair Co The Standard Meter Repair Shelton Meters-Gas Machinery—Screw and Rivet
Waterbury Farrel Foundry & Machine Co The
Waterbury Marine Reserve Gears Snow-Nabstedt Gear Corp The Sprague Meter Company Bridgeport New Haven Rhodes Inc M H Marking Devises
Hoggson & Pettis Mfg Co The
Parker Stamp Works Inc The (steel) Machinery-Wire Drawing
Newington
Machine Co The Hartford New Haver Microfilming
American Microfilming Service Company
New Haven Fenn Mfg Co The
Waterbury Farrel Foundry & Machine Co The
Waterbury Hartford Material Handling Parsons Co Inc W A (tote pans) Milk Bottle Carriers
John P Smith Co The 423-33 Chapel St
New Haven Durham Machinery-Wire Straightening
Machine Tool Inc New Haven Mats-Newspaper Lockwood Sons Inc Wm H Machines
Campbell Machine Div American Chain & Cable
Co Inc (cutting & nibbling) Bridgeport
Coulter & McKenzie Machine Co The (special, new development engineering design and construction) Bridgeport
Waterbury Mettler Machine Milling Machines
Pratt & Whitney Co Inc (Keller Tracer—
Controlled Milling Machines) West Hartford
Rowbottom Machine Company Inc (can)
Waterbury Hartford Mattresses Waterbury Mattress Waterbury Parsons Co Inc W A (tool kits) Durham Parsons to the fractional Parsons to the fractional Boxes and Displays

Durham Mfg Co The (Designing & Mfg to Customers specifications)

Merriam Mfg Co (Bond, Security, Cash, Utility, Personal Files, Drawer Safes, Custombilt containers and displays)

Charles Parker Co (sheet metal fabricators)

Meriden Mill Products Scovill Manufacturing Company (aluminum, brass, bronze, nickel silver—sheet, rod, wire, tube)

Waterbury Machines—Automatic
A H Nilson Mach Co The (Special) Bridgeport Mill Supplies
Wilcox-Crittenden Div North & Judd Mfg Co
Middletown Machines—Automatic Chucking
Bullard Company The
New Britain-Gridley Machine Division
The New Britain Machine Co (multiple
spindle and double end) New Britain
Pratt & Whitney Co Inc (Potter & Johnson)
West Hartford Millwork Hartford Builders Finish Co Hartford Metal Cleaners
Apothecaries Hall Co
Enthone Inc
Foy Electro-Chemical Co
MacDermid Incorporated Miniature Precision Connectors
Gorn Electric Co Stamford Waterbury New Haven Ansonia Minute Minders
Lux Clock Mfg Co The Machines—Brushing
Fuller Brush Co The Waterbury Waterbury Mirror Rosettes and Hangers
Waterbury Metal Cleaning Machines Machines-Contin-U-Matic
Bullard Company The (verticle multi-spindle-continuous turning)
Bridgepo Waterbury

Metal Finishes

Hartford

New Haven Bridgeport Waterbury

Waterbury Companies

Eastern Industries Inc
Gabb Special Products Div The E Horton & Windsor Locks
Son Co

Windsor Locks
(Advt.)

Colt's Manufacturing Company

Enthone Inc Mitchell-Bradford Chemical Co United Chromium Incorporated

Bridgeport

Machines—Draw Benches Fenn Manufacturing Company The Newington

Model Work  B & N Tool & Engineering Co (instruments and timing devices)  Oakville	Ovens—Electric Bauer & Company Inc Hartford	Andrew B Hendrix Co The New Haven
Fuller Brush Co The Hartford	Overhead Garage Doors Wallingford Planing Mill Co Inc Yalesville	American Brass Company The Bridgeport Brass Company Bridgeport
Motor Control Centers  Distribution Assemblies Department, General Electric Co Plainville	Package Sealers Better Packages Inc Shelton	Miller Company The (sheets, strips, rolls)  Meriden Seymour Mfg Co The Seymour
Motor-Generator Sets Electric Specialty Co Stamford	Packaging Machinery Colt's Manufacturing Company (box making machinery, Trade mark "Rite Size")	Waterbury Rolling Mills Inc (sheets, strips, rolls) Waterbury Western Brass Mills Div Olin Mathieson Chem-
Motors—Electric Timing Cramer Co Inc The R W Centerbrook	Packaging & Packing Mercer & Stewart Co The Hartford	Phosphor Bronze Ingots
Cramer Co Inc The R W Centerbrook Electric Specialty Co Stamford	Packing Auburn Manufacturing Company The (leather,	Whipple and Choate Company The Bridgeport  Photoflash Batteries  Electrical Div Olin Mathieson Chemical Corp
Moulded Plast'c Products Butterfield Inc T F Naugatuck Colt's Manufacturing Company Hartford	rubber, a bestos, fibre) Middletown Raybestos Division of Raybestos-Manhattan Inc (Asbestos and Rubber Sheet) Bridgeport	New Haven Photographic Equipment
Patent Button Co The Waterbury Waterbury Companies Inc Waterbury	Padlocks Sargent & Company New Haven	Electrical Div Olin Mathieson Chemical Corp New Haven Kalart Company Inc Plainville
Watertown Mfg Co The 117 Echo Lake Road Watertown Mouldings	Waterbury Lock & Specialty Co The Milford Yale & Towne Mfg Co Inc Stamford	Piano Repairs
Himmel Brothers Co The (architectural, metal and store front) Hamden	Pads-Office The Baker Goodyear Company New Haven	Pratt Read & Co Inc (keys and action)  Ivoryton  Piano Supplies
ABA Tool & Die Co Manchester Hoggson & Pettis Mfg Co The (steel)	Staminate Corp The New Haven	Pratt Read & Co (keys and actions, backs, plates)  Ivoryton  Pins
Parker Stamp Works Inc The (compression injection & transfer for plastics)  New Haven (compression Hartford	Panelboards—Lighting and Distribution Distribution Assemblies Department, General Electric Co Plainville	CEM Company ("Spirol") Danielson Pin Up Lamps
Napper Clothing Standard Card Clothing Co The (for textile	Leed Co The H A Hamden	Verplex Company The Essex Pipe
mills) Stafford Springs Nettings Wilcox Lace Corp The Middletown	Moore Special Tool Co (orush wheel dresser)	American Brass Co The (brass and copper) Waterbury Bridgeport Brass Co (brass and Copper)
Newspaper Mats Lockwood Sons Inc Wm H Hartford	Paperboard Federal Paper Board Co Inc	Chase Brass & Copper Co (red brass and copper) Waterbury
Nickel Anodes Apothecaries Hall Co Waterbury	Montville, New Haven & Versailles Gair Company Inc Robert Robertson Paper Box Co Montville	Howard Co (cement well and chimney) New Haven
Nickel Silver	New Haven Pulp and Board Co The New Haven	Pipe Fitters Hand Tools & Pipe Threading Machines  Convert March 1997
American Brass Company The Bridgeport Brass Company Bridgeport Plume & Atwood Mfg Co The Thomaston	American Rondo Corporation (specialty partitions)  Hamden	Capewell Manufacturing Company Hartford Pipe Fittings
Seymour Mfg Co The Seymour Waterbury Rolling Mills Inc (sheets, strips, rolls) Waterbury	Paper Boxes	Corley Co Inc Malleable Iron Fittings Co Plainville Branford
Western Brass Mills Div Olin Mathieson Chemical Corp (sheet, strip) New Haven	Atlantic Carton Corp (folding) Gair Co Inc Robert (folding) National Folding Box Co Inc (folding) New Haven & Versaille	Holo-Krome Screw Corporation The (counter- sunk) West Hartford
Whipple and Choate Company The Bridgeport	New Haven Board and Carton Co The New Haven Mills Inc H J Bristol	Pipe Plugs—Socketed Holo-Krome Screw Corp The West Hartford
Sargent & Company Yale & Towne Mfg Co Inc  New Haven Stamford	Robertson Paper Box Co (folding) Montville  Paper Boxes—Folding and Setup	Plastic Coatings Bischoff Chemical Corporation (Peelable Plastic Coatings) Ivoryton
Non-ferrous Metal Castings Miller Company The Charles Parker Co Meriden	Bridgeport Paper Box Company Bridgeport Wallingford	Frank Parizek Manufacturing Co The West Willington
Charles Parker Co Meriden  Nuts, Bolts and Washers	Paper Clips H C Cook Co The (steel) 32 Beaver St Ansonia	Patent Button Co The Waterbury Plastic Gems
Clark Brothers Bolt Co Milldale Office Equipment	Paper Mill Machinery Farrel-Birmingham Company Inc Ansonia	Colt's Manufacturing Company Hartford Plastic Lining Equipment
Pitney-Bowes Inc Underwood Corporation Bridgeport & Hartford	Paper Tubes and Cores Sonoco Products Co (Climax-Lowell) Div Mystic	Comco Inc Div of Enthone Inc New Haven  Plastic Materials
Offset Printing Kellogg & Bulkeley A Division of Connecticut Printers Inc Hartford	Parachute Cord Essex Mills Inc Essex	American Cyanamid Co (Molding Compounds, Adhesives, Laminating Resins) Wallingford  Plastic Pipe and Fittings
Oil Burners Miller Company The (domestic) Meriden	Parallel Tubes Sonoco Products Co (Climax-Lowell) Div Mystic	Comco Inc Div of Enthone Inc New Haven Plastic Molders
Peabody Engineering Corp (Mechanical and/or Steam Atomizer) Stamford Silent Glow Oil Burner Corp The	Clairglow Mfg Company Portland	Plastic Molding Corporation Sandy Hook Plastic Molding
1477 Park St Hartford Oil Tanks	Rhodes Inc M H Hartford	Butterfield Inc T F U S Plastic Molding Corporation  Plastic—Moulders  Naugatuck Wallingford
Norwalk Tank Co The (550 to 30M gals, under- writers above and under ground)  South Norwalk	Parts Scovill Manufacturing Company (ammunition, electric instrument, electrical appliance,	Colt's Manufacturing Company Hartford Conn Plastics Waterbury
Whitlock Manufacturing Co The Hartford  Olls—Cutting	fountain pen, instrument, lighting fixture, ordance, etc.—blanked, stamped, formed, drawn, re-drawn, forged, screw machined, headed, pointed, finished) Waterbury	Waterbury Companies Inc Watertown Mfg Co The Watertown Plastic Printing Plates
Anderson Oil Co Inc F E Portland  Open Knife Switches and Accessories	headed, pointed, finished) Waterbury  Passenger Car Sander	Lockwood Sons Inc Wm H Hartford
Trumbull Components Department, General Electric Co Plainville	Conn Telephone & Electric Corp Subsidiary of Great American Industries Inc Meriden	Plastic Wire Coating Materials Electronic Rubber Co Stamford Plastics
Optical Cores & Ingots Plume & Atwood Mig Co The Thomaston	Pattern-Makers Farrel-Birmingham Company Inc Ansonia	B F Goodrich Sponge Products Division Shelton Humphrey Fabricating Corp (laminated.
Otis Woven Awning Stripes The Falls Company Norwich	Penlights Bridgeport Metal Goods Mfg Co Bridgeport	fabricated parts)  Naugatuck Chemical Division Unitel State  Rubber Co  (Advt.)

#### 5 T ' M A D E 0 N NEC TI

Plastics Machinery Black Rock Mfg Company The Farrel-Birmingham Company Inc Plastics Plated—Gold & Silv		
Black Rock Mfg Company The Farrel-Birmingham Company Inc Plastics Plated—Gold & Silv		
Plastics Plated-Gold & Silv	Bridgeport	
Plastics Plated—Gold & Silv	Ansonia	
Donham Craft Inc	ver Thomaston	
Plastics—Moulds & Dies Crown Tool & Die Co Inc Parker Stamp Works Inc The (for	Bridgeport	
Parker Stamp Works Inc The (for	plastics) Hartford	
Plasticrete Bloc	Hartioru	
Plasticrete Corp	Hamden	
Acme Chromium Plating Co	New Haven	
Christie Plating Co	Groton	
Christie Plating Co City Plating Works Patent Button Co The Water Plating Company Chemical Processor The	Bridgeport	
Water Plating Company	Waterbury Waterbury	
Chiomium Frocess Company The	(Chromium	
Plating only)	Derby	
Platers' Equipment	Waterhury	
Comco Inc Div of Enthone Inc	New Haven	
Apothecaries Hall Company Comco Inc Div of Enthone Inc Foy Electro-Chemical Co Lea Manufacturing Co The	Ansonia	
MacDermid Incorporated	Waterbury	
Platers Metal		
Plume & Atwood Mfg Co The	Thomaston	
Plating		
Christie Plating Co The (including l	ead plating) Groton	
City Plating Works Inc Conn Metal Finishing Co	Bridgeport	
Conn Metal Finishing Co Superior Plating Co	Hamden Bridgeport	
Plating on Metals & Plast Donham Craft Inc	Thomaston	
Plating Processes and Supp		
Enthone Inc United Chromium Incorporated	New Haven	
	Waterbury	
Plumbers' Brass Goods Bridgeport Brass Co	Bridgeport	
Keeney Mfg Co The (special bends)	Newington	
Scovill Manufacturing Company V	Vaterbury 48	
Plumbing Specialties Risdon Manufacturing Co John M	Duesell Di	
Risdon Manutacturing Co John M	Naugatuck	
Pneumatic Machinery		
Bourne Tool & Die Co (built, design	watertown	
Pole Line Hardware	Watertown	
Malleable Iron Fittings Co	Branford	
Police Equipment The Smith-Worthington Saddlery (	'a Hastford	
	o marriord	
Polishing Mirror Polishing & Buffing Co	Waterbury	
Polishing & Buffing General Polishing & Buffing	Bridgeport	
Poly Chokes Poly Choke Company The (a sho		
Poly Choke Company The (a shot device)	Tarriffville	
Postage Meters		
Pitney Bowes Inc	Stamford	
Potentiometers-Electron	nic	
Bristel Company The	Waterbury	
Power Rollers Consolidated Industries Inc W	est Cheshire	
	old Saybrook	
Precision Electronic Char Saybrook Manufacturing Inc (		
Saybrook Manufacturing Inc (		
Saybrook Manufacturing Inc  Precision Machine Tool Sp Whitnon Manufacturing Co (for n	indles illing,	
Saybrook Manufacturing Inc ( Precision Machine Tool Sp. Whitnon Manufacturing Co (for m grinding, boring & drilling)	indles illing, Farmington	
Saybrook Manufacturing Inc  Precision Machine Tool Sp Whitnon Manufacturing Co (for m grinding, boring & drilling)  Precision Manufacturin	indles villing, Farmington	
Saybrook Manufacturing Inc  Precision Machine Tool Sp Whitnon Manufacturing Co (for n grinding, boring & drilling)  Precision Manufacturin Newton Co The (aircraft parts)	indles illing, Farmington g Manchester	
Saybrook Manufacturing Inc ( Precision Machine Tool Sp Whitnon Manufacturing Co (for n grinding, boring & drilling) Precision Manufacturin Newton Co The (aircraft parts) Precision Revolving Mach	Indles illing, Farmington  Manchester Inery	
Saybrook Manufacturing Inc ( Precision Machine Tool Sp Whitnon Manufacturing Co (for n grinding, boring & drilling)  Precision Manufacturin Newton Co The (aircraft parts)  Precision Revolving Mach Whitnon Manufacturing Co	indles cilling, Farmington  Manchester Inery Farmington	
Saybrook Manufacturing Inc ( Precision Machine Tool Sp Whitnon Manufacturing Co (for n grinding, boring & drilling) Precision Manufacturin Newton Co The (aircraft parts) Precision Revolving Mach	indles cilling, Farmington  Manchester Inery Farmington	
Saybrook Manufacturing Inc Precision Machine Tool Sp Whitnon Manufacturing Co (for m grinding, boring & drilling) Precision Manufacturin Newton Co The (aircraft parts) Precision Revolving Mach Whitnon Manufacturing Co Precision Springs & Wire i Rowley Spring Co Inc The Prefabricated Building	Indles billing, Farmington  Manchester linery Farmington  Forms Bristol  8	
Saybrook Manufacturing Inc Precision Machine Tool Sp Whitnon Manufacturing Co (for n grinding, boring & drilling) Precision Manufacturin Newton Co The (aircraft parts) Precision Revolving Mach Whitnon Manufacturing Co Precision Springs & Wire I Rowley Spring Co Inc The Prefabricated Building City Lumber of Bridgeport Inc Th	Indles billing, Farmington  Manchester linery Farmington  Forms Bristol  8	
Saybrook Manufacturing Inc Precision Machine Tool Sp Whitnon Manufacturing Co (for n grinding, boring & drilling) Precision Manufacturin Newton Co The (aircraft parts) Precision Revolving Mach Whitnon Manufacturing Co Precision Springs & Wire I Rowley Spring Co Inc The Prefabricated Building City Lumber of Bridgeport Inc Th	indles illing, Farmington  Manchester Inery Farmington Forms Bristol  Bridgeport	
Saybrook Manufacturing Inc Precision Machine Tool Sp Whitnon Manufacturing Co (for m grinding, boring & drilling) Precision Manufacturin Newton Co The (aircraft parts) Precision Revolving Mach Whitnon Manufacturing Co Precision Springs & Wire I Rowley Spring Co Inc The Prefabricated Building City Lumber of Bridgeport Inc Th Premium Specialities Waterbury Companies Inc	idlies, idlies, Farmington  Manchester Inery Farmington  Forms Bristol  Be Bridgeport  Waterbury	
Saybrook Manufacturing Inc Precision Machine Tool Sp Whitnon Manufacturing Co (for m grinding, boring & drilling) Precision Manufacturin Newton Co The (aircraft parts) Precision Revolving Mach Whitnon Manufacturing Co Precision Springs & Wire I Rowley Spring Co Inc The Prefabricated Building City Lumber of Bridgeport Inc Th Premium Specialities Waterbury Companies Inc	idlies, idlies, Farmington  Manchester Inery Farmington  Forms Bristol  Be Bridgeport  Waterbury	
Saybrook Manufacturing Inc ( Precision Machine Tool Sp Whitnon Manufacturing Co (for m grinding, boring & drilling)  Precision Manufacturin Newton Co The (aircraft parts)  Precision Revolving Mach Whitnon Manufacturing Co Precision Springs & Wire I Rowley Spring Co Inc The  Prefabricated Building City Lumber of Bridgeport Inc Th  Premium Specialties Waterbury Companies Inc  Preservatives—Wood, Rope, Darworth Incorporated ("Cuprino) ("Cellu-san")	idlies, idlies, Farmington  Manchester Inery Farmington  Forms Bristol  Be Bridgeport  Waterbury	
Saybrook Manufacturing Inc ( Precision Machine Tool Sp) Whitnon Manufacturing Co (for n grinding, boring & drilling) Precision Manufacturin Newton Co The (aircraft parts) Precision Revolving Mach Whitnon Manufacturing Co Precision Springs & Wire I Rowley Spring Co Inc The Prefabricated Building City Lumber of Bridgeport Inc Th Premium Specialities Waterbury Companies Inc Preservatives—Wood, Rope, Darworth Incorporated ("Cuprino) ("Cellu-san") Press Papers	idlies, idlies, idlies, idlies, idlies, Manchester Intery Farmington Forms Bristol S E Bridgeport Waterbury Fabric "') Simsbury	
Saybrook Manufacturing Inc ( Precision Machine Tool Sp Whitnon Manufacturing Co (for m grinding, boring & drilling)  Precision Manufacturin Newton Co The (aircraft parts)  Precision Revolving Mach Whitnon Manufacturing Co Precision Springs & Wire I Rowley Spring Co Inc The  Prefabricated Building City Lumber of Bridgeport Inc Th  Premium Specialties Waterbury Companies Inc  Preservatives—Wood, Rope, Darworth Incorporated ("Cuprino) ("Cellu-san")	idlies, idlies, Farmington  Manchester Inery Farmington  Forms Bristol  Be Bridgeport  Waterbury	

Presses—Molding andard Machinery Co The (compression and transfer molding, automatic and semi-auto-Mystic matic)

Presses—Power

neumatic Applications Co The (modernization
of presses through conversion to Wichita Air
Clutch operation)

Zaterbury Farrel Foundry & Machine Co The
Waterbury Pressure Vessels forwalk Tank Co Inc The (unfired to Code Par U 69-70) South N Vhitlock Manufacturing Co The H ASME South Norwalk Hartford Printing Bussmann Press Inc
lase Lockwood & Brainard A
lockwood & Hartford
lartford
lart Printing Machinery
anthin Engineering Co (automatic) Bridgeport
homas W Hall Company Stamford Printing Plates Hartford Printing Rollers
L Company Inc The (engraved)
Norwich hambers-Storck Company cipley Company Inc Production Welding
West Cheshire onsolidated Industries Profilers ratt & Whitney Co Inc

Production Control Equipment
Middletown

West Hartford

Propellers—Aircraft
Hamilton Standard Div United Aircraft Corp
(propellers and other aircraft equipment)
Windsor Locks

Bischoff Chemical Corporation (Peelable Plastic Coatings) Ivory Harrison Company The A S (Waxes) Ivoryton South Norwalk Publishers
O'Toole & Sons Inc The Stamford

Yale & Towne Mfg Co The Stamford Pumps—Small Industrial
Eastern Industries Inc New Haven

Pump Valves
Colt's Manufacturing Company Hartford

Punches
Hoggson & Pettis Mfg Co The (ticket & cloth)
141 Brewery St New Haven

Putty Softeners—Electrical Fletcher Terry Co The Box 415 I Box 415 Forestville

**Pyrometers** Bristol Co The (recording and controlling)
Waterbury

Radiation—Finned Copper
Bush Manufacturing Co

G & O Manufacturing Company The
New Haven Vulcan Radiator Co The (steel and copper)
Hartford

Radiators-Engine Cooling
New Haven G & O Manufacturing Co

Ratchet Offset Screw Driver Co J W Durham Chapman Co J

Rayon Staple Fiber Hartford Rayon Corp The Rocky Hill

Reamers
Pratt & Whitney Co Inc (All types)
West Hartford

Recorders
Bristol Co The (automatic controllers, temperature, pressure, flow, humidty) Waterbury

Reduction Gears Farrel-Birmingham Company Inc Snow-Nabstedt Gear Corp The Ansonia New Haven Refractories Howard Company
Mullite Refractories Company The New Haven Shelton

N

Refrigeration

Bowser Techanical Refrigeration Div Bowser
Inc (high altitude, low temperature)
Terryville

Bush Manufacturing Co The West Hartford Regulators

Norwalk Valve Company (for gas and air)
South Norwalk
Sorensen & Company Inc
Stamford

Raymond Engineering Laboratories
(Electro-Mechanical) Middletown

(Electro-Mechanicai)

Resistance Wire
C O Jeliff Mfg Co The (nickel chromium, copper nickel, iron chromium, aluminum)

Southport
Stamford

Respirators
American Optical Company Safety Products

Retainers
Hartford Steel Ball Co The (bicycle & automotive)

motive)

Riveting Machines

Grant Mfg & Machine Co The
Ripley Company Inc
H P Townsend Manufacturing Co
The
Elmwood

Blake & Johnson Co The (brass, copper and non-ferrous)
Clark Brothers Bolt Co Mildale Plume & Atwood Mfg Co The Thomaston Raybestos Div of Raybestos-Manhattan Inc The (brass and aluminum tubular and solid copper)
Raybestos Div of Raybestos-Manhattan Inc The (iron)

Rods American Brass Company The (copper, brass, bronze)

Bridgeport Brass Company Bridgeport American
bronze)
Bridgeport Brass Company
Bridgeport Brass Corp The (brass and bronze)
Bristol Scovill Manufacturing Company (aluminum, brass, bronze, etc.) Waterbury

Rollers—Bituminous Paving
Gabb Special Products Div E Horton & Son
Company

Windsor Locks

Roller Skate Wheels
Raybestos Division of Raybestos-Manhattan Inc

Arms and Ammunition Div Olin Mathieson Chemical Corp New Haven

Rolling Mills & Equipment

Rolling Mills & Equipment
Farrel-Birmingham Company Inc Ansonia
Fenn Mfg Co The
Precision Methods & Machines Inc
Waterbury Waterbury Farrel Foundry & Machine Co The Waterbury

Rolls Farrel-Birmingham Company Inc (Chilled and Alloy Iron, Steel) Ansonia

Rope Wire
American Steel & Wire Div of U S Steel
New Haven

Rubber-Cellular
B F Goodrich Sponge Products Division Shelton

Rubber Chemicals
Chemical Division United States Naugatuck Rubber Co Stamford Rubber Supply Co The Vulcanized Vegetable Oils)

Rubber Cutting Machinery
Black Rock Mfg Company The Bridgeport

Rubberized Fabrics Duro-Gloss Rubber Co The New Haven

Rubber Footwear Goodyear Rubber Co The Middletown

Rubber Gloves Seamless Rubber Company The New Haven (Advt.)

#### A D IT' S E IN CONNECTICUT

Rubber-Handmade Specialties Seamless Rubber Company The New Haven Seamless Rubber Company The New Existent Rubber Latex Compounds and Dispersions Naugatuck Chemical Division United States Rubber Co (coating, impregnating and adhe-sive compounds) Naugatuck Rubber-Latex Foam
B F Goodrich Sponge Products Division Shelton
Rubber Mill Machinery
Farrel-Birmingham Company Inc Ansonia Rubber-Moided Specialties Airex Rubber Prod Corp Canfield Co The H O Seamless Rubber Company The Portland Rubber Products
Airex Rubber Prod Corp Portland Rubber Printing Plates Lockwood Sons Inc Wm H Hartford Rubber Products—Mechanical
Auburn Manufacturing Company The (washers, gaskets, molded parts)
Canfield Co The H O Bridgeport
Seamless Rubber Company The New Haven Bridgeport New Haven Rubber-Reclaimed Chemical Division United States Naugatuck Rubbers cal Div U S Rubber Co Naugatuck Naugatuck Chemical Div (special synthetic) John P Smith Co The 42 423-33 Chapel St New Haven Anderson Oil Co Inc F E Portland New Haven **Rust Removers** New Haven Enthone Inc Saddlery
The Smith-Worthington Saddlery Co Hartford Safety Clothing
American Optical Company Safety Products Safety Puses
Ensign-Bickford Co The (mining & detonating) Safety Gloves and Mittens American Optical Company Safety Division Products Safety Goggles American Optical Company Safety Products Putnam Trumbull Components Department, Division General Plainville Saw Blades—Hack Capewell Mfg Co The Hartford Saw Blades—Hack & Band Capewell Manufacturing Company Hartford Saws, Band, Metal Cutting
Atlantic Saw Mfg Co New Haven
Scissors Acme Shear Company The Bridgeport Screens
Hartford Wire Works Co The (Windows, Doors and Porches)
Hartford Screw Caps
Weimann Bros Mfg Co The (small for bottles) Screw Machines H P Townsend Mfg Company The Elmwood Screw Machine Products
Apex Tool Co Inc The
Auto Electric Screw Machine Co Inc
Bridgeport
Bridgeport
Bridgeport Blake & Johnson Co The
Consolidated Industries
Dependable Automatic Screw
Eastern Machine Screw Corp
Truman & Barclay Sts
Fairchild Screw Products Inc
Franklin Screw Machine Co
Capacity)
Garthwait Mfg Co A E (up to and incl ½")
Waterbury
Greist Mfg Co The (Up to 1½" capacity)
Greist Mfg Co The (Up to 1½" capacity)
Waterbury
Greist Mfg Co The (Up to 1½" capacity)
New Haven
Horberg Grinding Industries Inc
Horberg Grinding Industries Inc
and ground type only)
Bridgeport
Forestville
Junior Screw Machine Products
Kerrin Company
Kerrin Company
Wethersfield

Screw Machine Products (Cont.)
Main Screw Machine Products (davenport & automatics exclusively) Waterbury
National Automatic Products Company The National Automatic Frontiers

Nelson's Screw Machine Products
New Britain Machine Company The
New Haven Screw Machine Prods Inc
(up to 1½" capacity)
Olson Brothers Company (up to ½" capacity)
Plainville
Olson & Sons R P
Peck Spring Co The
Thomaston Olson & Sons R P
Peck Spring Co The
Plume & Atwood Mfg Co The
Scovill Manufacturing Company
United Screw Machine Co
Waterbury Machine Tools & Products Co
(Brown & Sharpe and Davenport) Waterbury

(Brown & Sharpe and Davengols)

Screw Machine Tools

American Cam Company Inc (Circular Form Tools)

Pratt & Whitney Co Inc (Reamers, Taps, Dies, Blades and Knurls)

West Hartford
Somma Tool Co (precision circular form tools)

Waterbury

American Screw Company
Atlantic Screw Works (wood)
Blake & Johnson Co The (machine and wood)
Waterville
Bristol Company The (socket set and waterbury
Willdale Screws)
Screws Suparative Screws Screws Suparative Screws Suparative Screws Screws Corporation The (socket set and socket cap)
Scovill Manufacturing Company Superior Manufacturing Co The Winsted

Screws—Socket
Allen Manufacturing Company The Hartford
Bristol Co The
Holo-Krome Screw Corp The
West Hartford Sealing Tape Machines

Better Packages Inc

Service Entrance Equipment
Trumbull Components Department, General
Electric Co
Sewing Machines
Greist Mfg Co The (Sewing Machine attachments)
503 Blake St New Haven
Merrow Machine Co The (Industrial) Hartford
Singer Manufacturing Company The (industrial)
Bridgeport

Shaving Soaps J B Williams Co The Glastonbury Shears

Acme Shear Co The (household)

Sheet Metal Products

American Brass Co The (brass and copper)

Waterbury

Canaan

Merriam Mfg Co (security boxes, fitted tool boxes, tackle boxes, displays)

Charles Parker Co (sheet metal fabricators)

Meriden

Thomaston

Thomaston

Parsons Co Inc W A (fabricators)
Plume & Atwood Mfg Co The
United Manufacturing Co Division of The
W L Maxson Corp

Sheet Metal Stampings
American Brass Company The
American Buckle Co The
Dov'lal Tool & Mig Inc The
Dresser Products Inc
J H Sessions & Son
Patent Button Co The
Scovill Manufacturing Company
brass, bronze, copper, nickel silver, steel and
other metals and alloys)

Waterbury Shells

Shells

Scovill Manufacturing Company (aluminum, brass, bronze, copper, nickel silver—drawn, stamped—electric socket, screw) Waterbury Wolcott Tool and Manufacturing Company Inc.

Waterbury

Shipment Sealers Better Packages Inc Shelton Showcase Lighting Equipment
Wiremold Company The Hartford

H C Cook Co The (for card files)
32 Beaver St Signs Berger Sign Co (neon electric-porcelain enamel-stainless steel) Hartford Silk Screen Process Printing Norton Co B H New Haven

Slik Screen Printing
New Haven Sirocco Screenprints

Silk Screening on Metal

Merriam Mfg Co (Displays and Specialties, to

Durham

Silver & Gold Plating
Donham Craft Inc (on metals & plastics) Thomaston Simulators

Reflectone Corporation The Stamford

Sintered Metal Products
Raybestos Division of Raybestos-Manhattan

Sizing and Finishing Compounds
American Cyanamid Company Waterbury

Silde Fasteners
G E Prentice Mfg Co The
North & Judd Manufacturing Co
Scovill Manufacturing Company (GRIPPER zippers)

Slings
American Steel & Wire Div of U. S. Steel
New Haven

Smoke Stacks Bigelow Company The (steel) Norwalk Tank Co The New Haven South Norw

Snap Fasteners
Scovill Manufacturing Company (GRIPPER
Waterby snap fasteners)

J B Williams Co The (industrial soaps, toilet soaps, shaving soaps) Glastonbury

J B Williams soaps)
Special Machinery
Banthin Engineering Company (complete and/or parts)
Fig. Co Inc
The
Danbury
Bridgeport
Angonia Banthin Engineering Company (complet parts)
Boesch Mig Co Inc
Black Rock Mig Company The
Farrel-Birmingham Company Inc
Federal Machine & Tool Co
Fean Mig Co The
Hartford Special Machinery Co The
H P Townsend Mig Company The
National Sheradizing & Machine Co
& stock shells for rubber industry)
Swan Tool & Machine Co The Bristol Newington Hartford Elmwood (mandrels Hartford Hartford

Special Parts Fenn Mfg Co The Newington Greist Mfg Co The (small machines, especially precision stampings) New Haven J H Sessions & Son Bristol

Spinnings
Gray Manufacturing Company The Hartford Spline Milling Machines
Townsend Mfg Co The H P

Sponge Rubber
B F Goodrich Sponge Products Division Shelton

Spotwelding
Spotwelders Inc (aluminum, steel, magnesium, titanium & alloys)
Stratford Spray Painting Equipment and Supplies
a Manufacturing Co The Waterbury

Spring Colling Machines
Torrington Manufacturing Co The Torrington

Spring Presses
Townsend Mfg Co The H P Elmwood

Spring Units
Owen Silent Spring Division American Chain & Cable Company Inc Bridgeport

Spring Washers
Barnes Co The Wallace Div Associated Spring
Corp Bristel

Corp
Springs—Coil & Flat
Barnes Co The Wallace Div Associated Spring
Bristol 

Springs—Flat
Barnes Co The Wallace Div Associated Spring
Bristol Corp Bristol Spring Manufacturing Co Plainville Foursome Manufacturing Co Humason Mfg Co The Bristol

Springs—Furniture
Owen Silent Spring Division American Chain & Cable Company Inc Bridgeport (Advt.)

#### T ' S N A D N C 0 N ECTIC

Carloge Wise	Supplied Bubban Goods	
Springs-Wire Barnes Co The Wallace Div Associated Spring	Seamless Rubber Company The New Haven	Grant
Corp Bristol Spring Manufacturing Co Plainville	Fenn Mfg Co The Newington	mat
Colonial Spring Corporation The Hartford Connecticat Spring Corporation The (compres-	Switchboards	A W
sion, extension, torsion) Hartford	Distribution Assemblies Department, General Electric Co Plainville	R W Rhode
Foursome Manufacturing Co Bristol Humason Mfg Co The Forestville	Switchboards Wire and Cables	Kuoue
D R Templeman Co (coil and torsion) Plainville J W Bernston Company (coil and torsion)	Rockbestos Products Corp (asbestos insulated) New Haven	B & I
Newcomb Spring Corp The Southington	Switches—Electric General Electric Company Bridgeport	P W
Springs, Wire & Flat	Synthetic Resins	A W
Autoyre Company The Oakville	American Cyanamid Co (Textile Resins, Paper Resins) Waterbury	Rhode
Scovill Manufacturing Company (GREEN	Tabulating Equipment-Manual	Unite
SPOT) Waterbury Stamped Metal Products	Denominator Company Inc Woodbury Veeder-Root Incorporated Hartford	
American Brass Company The Waterbury	Tanks	A W
C & H Mig Co Inc Watertown	Bigelow Company The (steel) New Haven Comco Inc Div of Enthone Inc (steel, alloy	MH
Donahue Mfg Co Inc DooVal Tool & Mfg Inc The  Watertown Naugatuck	and lined) New Haven Connecticut Welders Inc (steel, alloy & lined)	Thins
Foursome Manufacturing Co Plume & Atwood Mfg Co The (small)	Wallingford	Wilco
Thomaston	Foy Electro-Chemical Co (Metal & Plastic) Ansonia	
Saybrook Manufacturing Inc Old Saybrook Scovill Manufacturing Company aluminum,	Norwalk Tank Co The South Norwalk Rolock Inc (Alloy) Fairfield	Scovi
brass, bronze, copper, nickel silver, steel and other metals and alloys—automotive,	Rolock Inc (Alloy) Fairfield Storts Welding Company (steel and alloy) Meriden	Car
electrical, radio, etc.—deep drawn, enameled) Waterbury	Walton Company The West Hartford	Vand
Stanley Pressed Metal New Britain	Tape	Comm
Stampings—Small Acme Shear Co The Bridgeport	Russell Manufacturing Company The (woven cotton and woven glass tape) Middletown	D 4
Acme Shear Co The Bridgeport Barnes Co The Wallace Div Associated Spring Corp Bristol	Tapes-Industrial Pressure Sensitive	B & tur
Barrett Co William L Bristol	Seamless Rubber Company The New Haven Tape Recorders	Hogg 141
Greist Manufacturing Co The New Haven	Conn Telephone & Electric Corp Subsidiary of	
Humason Mfg Co The Forestville Stamps	Great American Industries Inc Meriden Tape Recorder Magazines	C &
Hoggson & Pettis Mfg Co The (steel) 141 Brewery St New Haven	Conn Telephone & Electric Corp Subsidiary of Great American Industries Inc Meriden	Metr
Parker Stamp Works Inc The (steel) Hartford	Taps	Swar
American Brass Company The Waterbury	Pratt & Whitney Co Inc West Hartford Tarred Lines	Greis
Steel	Brownell & Co Inc Moodus	
Stanley Works The (cold rolled strip) New Britain	Bristol Co The Waterbury	O.S.
Steel Castings Farrel-Birmingham Company Inc Ansonia	Telephone Answering & Recording Machines	Rive
Hartford Electric Steel Corp The (Carbon, low	Conn Telephone & Electric Corp Subsidiary of Great American Industries Inc Meriden	_
alloy and stainless steel and Ductile iron) Hartford	Television-Radio	Fred
Malleable Iron Fittings Co Branford Nutmeg Crucible Steel Co Branford	Junior Screw Machine Products Inc West Haven	Boes
Steel-Cold Rolled Spring Barnes Co The Wallace Div Associated Spring	McNeal J D New Haven	Refle
Corp Bristol	Testers—Insulation Wire & Cable	_
Steel—Cold Rolled Stainless Ulbrich Stainless Steels Wallingford	Davis Electric Company Wallingford	Geo
Wallingford Steel Company Wallingford Steel-Cold Rolled Strip and Sheets	Sperry Products Inc Danbury	N N Wat
American Steel & Wire Div of U S Steel	Merrow Machine Co The	
Detroit Steel Corporation New Haven	2814 Laurel St Hartford	Ame
Wallingford Steel Company Wallingford Steel Goods	Textile Printing Gums Polymer Industries Inc Springdale	Berl
Merriam Mfg Co (sheets products to order)	Textile Processors	Dan
Steel-Hot Rolled Strip Northeastern Steel Corp Bridgeport	American Dyeing Corporation (rayon, acetate, nylon, dacron, other synthetics) Rockville	Met
Steel Rolling Rules	Printel Co. The (recording and automatic and	ve
Waterbury Lock & Specialty Co The Milford Steel Strapping	Bristol Co The (recording and automatic con- trol) Waterbury	0
Stanley Works The New Britain	Manning Maxwell & Moore Inc Stratford	Geor
New Haven Electrotype Div Electrographic Corp	Thermostats Bridgeport Thermostat Company Inc (automatic)	Exc
Stop Clocks, Electric	Thin Gauge Metals	Geo
H C Thompson Clock Co The Bristol	Plume & Atwood Mfg Co The Thomaston Thinsheet Metals Co The (plain or tinned in	Exc
R A E Storage Battery Mfg Co Glastonbury	rolls) Waterbury	
Straps, Leather	American Thread Co The Willimantic	Don
Auburn Manufacturing Company The (textile, industrial, skate, carriage) Middletown	Belding Heminway Corticelli Putnam	H
Structural Mouldings Leed Co The H A Hamden	Max Pollack & Co Inc Groton and Willimantic Wm Johl Manufacturing Co Mystic	Wei
Studio Couches	Thread Chasers	tu
Waterbury Mattress Co Waterbury Super Refractories	Geometric Tool Division, Greenfield Tap & Die Corp New Haven	Sco
Mullite Refractories Company The Shelton	Pratt & Whitney Co Inc West Hartford	na
Surface Metal Raceway & Fittings Wiremold Company The Hartford	Thread Milling Machines	Stan
Surgical Dressings	Pratt & Whitney Co Inc West Hartford	rı
Acme Cotton Products Co Inc Seamless Rubber Company The New Haven	Thread Rolling Machinery Hartford Special Machinery Co The Hartford	She

orge P Clark Co Truck-Lift celsior Hardware Co The orge P Clark Co Trucks—Skid Platforms celsior Hardware Co The (lift) mahue Mfg Co Inc Tube Clips
C Cook Co The (for collapsible tubes)
32 Beaver St
eimann Bros Mfg Co The (for collapsible
Derby Tube Fittings ovill Manufacturing Company (UNIFLARE flared tube and LOXIT compression tube)
Waterbury Tubers
tandard Machinery Co The (tubers for both rubber and plastic industries) Mystic

Threading Machines at Mfg & Machine Co The (double and auto-Bridgeport Timers, Interval
V Haydon Co The
Thompson Clock Co The
C Cramer Company Inc The
des Inc M H Waterbury Bristol Centerbrook Hartford Timing Devices

N Tool & Engineering Co (development and odel work)
V Cramer Company Inc The
V Haydon Co The
V Haydon Co The
Since M H
Thomas Clocks
Thomas Clocks
The Waterbury

Waterbury

Waterbury

Waterbury

Waterbury

Waterbury

Waterbury Timing Devices & Time Switches
V Haydon Co The Waterbury
Check Manufacturing Company
Hartford
Hodos Inc Hartford I Rhodes Inc
Tinning
sheet Metals Co The (non-ferrous metals in Waterbury)
cox-Crittenden Div North & Judd Mfg Co
Middletown Tokens
will Manufacturing Company (bus, street
ur and subway fare)

Middletown
(bus, street
Waterbury Tool Chests derman Manufacturing Co The Willimantic Tool Hardening Treating Co Bridgeport
Tools
k N Tool & Engineering Co (dies, jigs, fixares, sub-press and progressive) Oakville
ggson & Pettis Mfg Co The (rubber workers)
41 Brewery St
New Haven Tools & Dies
t H Mfg Co Inc
abro Tool-Die & Mfg Co
tropolitan Tool & Die
ore Special Tool Co
an Tool & Machine Co The Watertown Bridgeport Hartford Tools, Dies & Fixtures
ist Mfg Co The New Haven Tools, Dies, Jigs & Fixtures

C.A. Manufacturing Co
erbein Co J A
erbein Co J A
erbein Co J A
Middletown
Middletown
New Haven
New Haven Middletown New Haven New Britain Tools, Fixtures, Gauges dericks Tool Co J F West Hartford Toroidal Winding Machines
esch Mfg Co Inc Danbury Totalizers lectone Corporation The o S Scott Mfg Co The ng Bell Co The N Hill Brass Co The atterbury Companies Inc Wallingford East Hampton East Hampton Waterbury Tramways

serican Steel & Wire Div of U S Steel

New Haven Transformers
rkshire Transformer Corp The New Milford
Winsted Trucks—Commercial etropolitan Body Company (Internationl Har-vester truck chasis and "Metro" bodies) bodies) Bridgeport Trucks—Industrial Windsor Locks

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Stamford

Stamford Windsor Locks

Stamford

#### T ' M N S ADE 1 CONNECTICUT

688 Third Ave West Hayen (Advt.)

Tubing	Wall Paper Stamford Wall Paper Co Inc Stamford	Wire Arches & Trell:ses Hartford Wire Works Co The Hartford
American Brass Co The (brass and copper) Waterbury	Washers Stamford	John P Smith Co The
Bridgeport Brass Company (brass and copper) Bridgeport G & O Manufacturing Co (finned) New Haven	American Felt Co (felt) Glenville Auburn Manufacturing Company The (all ma-	Wire Baskets
Scoville Manufacturing Company (Brass and Copper) Waterbury 91	terials) Middletown Blake & Johnson The (brass, copper & non- ferrous) Waterville	Wiretex Mfg Inc (Industrial, for acid, heat, treating and degreasing) Bridgeport
American Brass Co Metal Hose Waterbury	Clark Brothers Bolt Co Humphrey Fabricating Corp Plume & Atwood Mfg Co The (brass & copper)	Wire Cloth Hartford Wire Works Co The Hartford C O Jeliff Mfg Co The (all metal, all meshes)
American Brass Company The Waterbury Scovill Manufacturing Company Waterbury 91	J H Rosenbeck Inc Torrington Saling Manufacturing Company (made to order)	Pequot Wire Cloth Co Inc Southport Rolock Inc (Alloy) Fairfield
Tumbling Barrels Henderson Bros Co The Waterbury Tumbling Equipment & Supplies	Unionville Washers-Felt Chas W House & Sons Inc (Mills & Cutting	Smith Co The John P New Haven Wire Dipping Baskets
Esbec Barrel Finishing Corp Beyram Foy Electro-Chemical Co Ansonia	Plant) Unionville  Watches  E Ingraham Co The Bristol	Hartford Wire Works Co The John P Smith Co The 423-33 Chapel St  New Haven
Tumbling Service Esbec Barrel Finishing Corp Meriden Turntables	United States Time Corporation The Waterbury	Wire Drawing Dies Waterbury Wire Die Co The Waterbury
Macton Machinery Company Inc (industrial & display)  Stamford  Typewriters	Water Heaters Whitlock Manufacturing Co The (instantaneous & storage) Hartford	Wire Formings Autoyre Co The Oakville
Royal Typewriter Co Inc Hartford Underwood Corporation Hartford	Water Heaters—Electric Bauer & Company Inc Hartford	G E Prentice Mfg Co The Master Engineering Company West Cheshire
Typewriters-Portable Royal Typewriter Company Inc Underwood Corporation  Hartford Hartford	Water Heaters—Gas or Kerosene Holyoke Heater Corp of Conn Inc Hartford	North & Judd Manufacturing Co Turner & Seymour Manufacturing Co The Torrington
Typewriter Ribbons and Supplies Royal Typewriter Company Inc Hartford	Harrison Company The A S (and other pro-	Verplex Company The Essex Wire Forms
Underwood Corporation Hartford and Bridgeport Ultrasonic Processing Equipment	tective coatings) South Norwalk  Waxes—Floor Fuller Brush Co The Hartford	Barnes Co The Wallace Div Associated Spring Corp Bristol Bristol Spring Manufacturing Co Plainville
General Ultrasonics Co The Hartford Underclearer Rolls	Wedges Saling Manufacturing Company (hammer &	Colonial Spring Corporation The Connecticut Spring Corporation The Hartford Foursome Manufacturing Co
Sonoco Products Co (Climax-Lowell Div) Mystic Vacuum Bottles and Containers	welding Unionville	Gemco Manufacturing Co Inc Southington Humason Mfg Co The Forestville
American Thermos Bottle Co Norwich Vacuum Cleaners Electrolux Corporation Old Greenwich	Connecticut Welders Inc (fabrication & repairs) Wallingford Farrel-Birmingham Company Inc Ansonia	New England Spring Mfg Co Templeman Co D R Terryville Manufacturing Co Terryville Manufacturing Co
Spencer Turbine Co The Valve Discs Hartford	G E Wheeler Company (Fabrication of Steel & Non-Ferrous Metals) New Haven Industrial Welding Company (Equipment Manu-	Wire Goods  American Buckle Co The (overall trimmings)
Colt's Manufacturing Company Hartford  Valves—Automobile Tire  Bridgeport Brass Company Bridgeport	Industrial Welding Company (Equipment Manufacturers—Steel Fabricators) Hartford Welding—Lead	Patent Button Co The Waterbury Scovill Manufacturing Company (To Order)
Valves Norwalk Valve Company (sensitive check valves) South Norwalk	Connecticut Welders Inc (tanks & coils) Wallingford Storts Welding Company (tanks and fabrica-	Waterbury 9 Wire Partitions Hartford Wire Works Co The Hartford
Valves—Radlator Air Bridgeport Brass Company Bridgeport	Meriden  Welding Rods  American Brass Company The  Waterbury	John P Smith Co The 423-33 Chapel St New Haven
Valves Relief & Control Beaton & Caldwell Mfg Co New Britain	Bridgeport Brass Company Bridgeport Bristol Brass Co The (brass & bronze) Bristol	Clairglow Mfg Company Portlan
Valves—Safety & Relief Manning Maxwell & Moore Inc Vanity Boxes  Valves—Safety & Relief Stratford	Wells Church Co The Stephen B Seymour Wheels—Industrial	Humason Mfg Co The Forestvill Plume & Atwood Mfg Co The (to order) Thomasto
Bridgeport Metal Goods Mfg Co Bridgeport Plume & Atwood Manufacturing Co Thomaston	George P Clark Co Windsor Locks	Wire Reels A H Nilson Mach Co The Bridgepon
Scovill Manufacturing Company Waterbury Vapor Degreasing Machines	Auburn Manufacturing Company The (felt, as- bestos) Middletown Holyoke Heater Corp of Conn Inc Hartford	American Buckle Co The (pan handles an tinners' trimmings) West Have
Foy Electro-Chemical Co (Manual & Automatic) Ansonia Varnishes	Wiffle Ball Inc The New Haven	Humason Mfg Co The Forestvill Templeman Co D R Plainvill
Staminite Corp The New Haven  Vegetable Peelers Colt's Manufacturing Company  Hartford	Window & Door Guards Hartford Wire Works Co The Hartford Smith Co The John P New Haven	Wire Rope and Strand  American Steel & Wire Div of U S Steel  New Have
American Velvet Co (owned and operated by	New England Shade & Blind Co Inc Durham	Wire—Specialties Andrew B Hendryx Co The New Have
A Wimpfheimer & Bro Inc)  Leiss Velvet Mfg Co Inc The  Velvet Textile Corporation The (Velveteen)	Wiping Cloths Federal Textile Corporation New Haven	Wiring Devices Harvey Hubbell Inc Bridgepo
Venetian Blinds	American Brass Company The Waterbury American Steel & Wire Div of U S Steel	Wood Scrapers Fletcher-Terry Co The Forestvii
Jennings Company The S Barry New Haven New England Shade & Blind Co Inc Durham	Atlantic Wire Co The (steel)  Branford Bartlett Hair Spring Wire Co The (hair spring)	Woodwork C H Dresser & Sons Inc (Mfg all kinds
Russell Manufacturing Company cotton and woven plastic)  The (woven Middletown	Bridgeport Brass Company (brass and silicon bronze) Bridgeport	woodwork) Hartford Builders Finish Co Hartfo
Foy Electro-Chemical Co  Nantileting Equipment Ansonia	Bristol Brass Corp The (brass & bronze) Bristol Driscoll Wire Co The (steel) Shelton Hudson Wire Co Winsted Div (insulated &	Chas W House & Sons Inc (Mills & Cutti Plant) Unionvi
Colonial Blower Company Plainville  Vertical Shapers	enameled magnet) Platt Bros & Co The (zinc wire) P O Box 1030 Winsted Winsted	Yarns Aldon Spinning Mills Corporation The (fir
Pratt & Whitney Co Inc West Hartford Vibrators—Pneumatic Branford Co The (industrial) New Haven	Plume & Atwood Mfg Co The (brass, bronze, nickel silver)  Scovill Manufacturing Company (Brass, Bronze	wollen and specialty)  Ensign-Bickford Co The (jute-carpet) Simsbu Hartford Spinning Incorporated (Wollen, kr ting and weaving yarns)  Unionvi
Vinyl Extrusion & Moulding Compounds Electronic Rubber Co Stamford	and Nickel Silver) Waterbury 91 Wire and Cable	Zinc
Vises Charles Parker Co The Meriden Fenn Manufacturing Company The (Quick-	General Electric Company (for residential, com- mercial and industrial applications)  Bridgeport	P O Box 1030 Waterbu
Action Vises)  Vanderman Manufacturing Co The (Combination Bench Pipe)  Newington Willimantic	Rockbestos Products Corporation (all asbestos, mining, shipboard and appliance applications) New Haven	Newton-New Haven Co Inc 688 Third A West Hay (Adv

#### Operation Survey Pays Off at General Electric

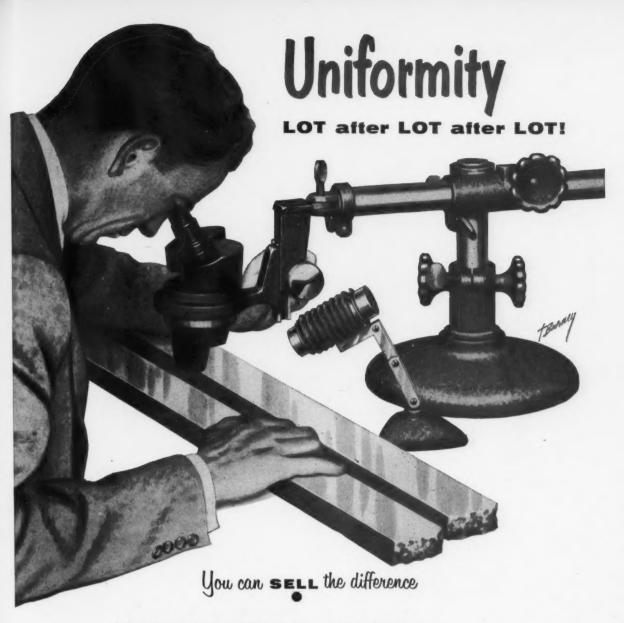
(Continued from page 14)

#### **Questions On Operations Survey Sheet**

- 1. Is this operation necessary?
- Are there any deviations from the conditions on which standard is based:
  - a. Material
  - b. Methods procedure
  - c. Tools
  - d. Machine speed or feed
  - e. Dimension
  - f. Product design
- 3. Are there elements in the study which have been eliminated or could be eliminated?
- 4. Is it possible to combine any of the elements?
- 5. Can this operation be combined with another?
- 6. Is it possible to arrange location of material to better advantage for next operation?
- 7. Are material supplies, tools and reels laid out ahead of time and conveniently arranged for use?
- 8. Is the operation of the job efficient as to:
  - a. Machine
  - b. Tools
  - c. Processing Length
  - d. Material and supplies
  - e. Reel size
  - f. Location and arrangement
  - g. Machine task
- Could a less expensive or more readily available material be substituted?
- 10. Is material bought in economical size and quantity to improve inventory control?
- 11. Can any materials be standardized?
- 12. Is the correct job classification being used?
- 13. Can equipment be redesigned to simplify the operation?
- 14. Is there a better machine or better equipment that you know of that will do the job?
- 15. What can be done to reduce spoilage?
- 16. Is the lighting adequate for quality work?
- 17. Could the operation be improved by use of mechanical aid?
- 18. What can be done to improve material utilization?
- 19. Is the job unnecessarily hazardous?
- 20. Can housekeeping be improved?
- 21. If this operation is the cause of unnecessary unapplied or indirect expense can it be improved?
- 22. Is there any obsolete or surplus equipment that should be declared as surplus?
- 23. Is this operation scheduled properly for economical quantity and a minimum inventory?
- 24. Are there any other aspects to this operation that could be improved?

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Uniformity is a much used . . . and often abused . . . word. Nevertheless, uniformity in Brass Mill Products is a matter of dollars-and-cents importance to you as a fabricator.

That is why Scovill stresses metal SOUNDNESS and UNIFORMITY through every step in production.

The constant drive for inherently sounder, more uniform metal spurred Scovill's pioneer introduction of full-scale continuous casting in the brass industry. Advanced, precision-controlled cold-rolling and annealing cycles . . . a forward-looking metals research program . . . all contribute to maintenance of the same ideal.

Scovill brass fabricating customers see the difference . . . in adherence to close-tolerance specifications, order after order, lot after lot. You, in turn, can SELL the difference in the superior uniform quality of your own products.

Scovill Manufacturing Company, Mill Products Division, 99 Mill Street, Waterbury 20, Connecticut. Phone Plaza 4-1171.



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